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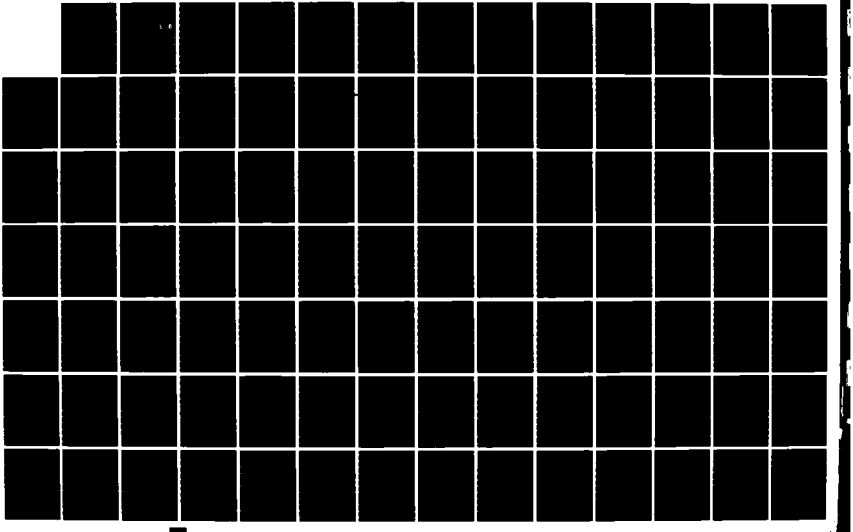

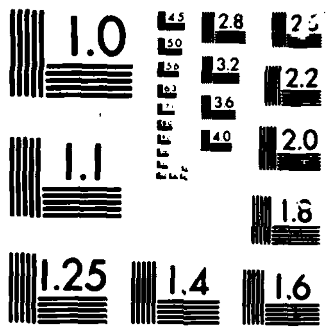

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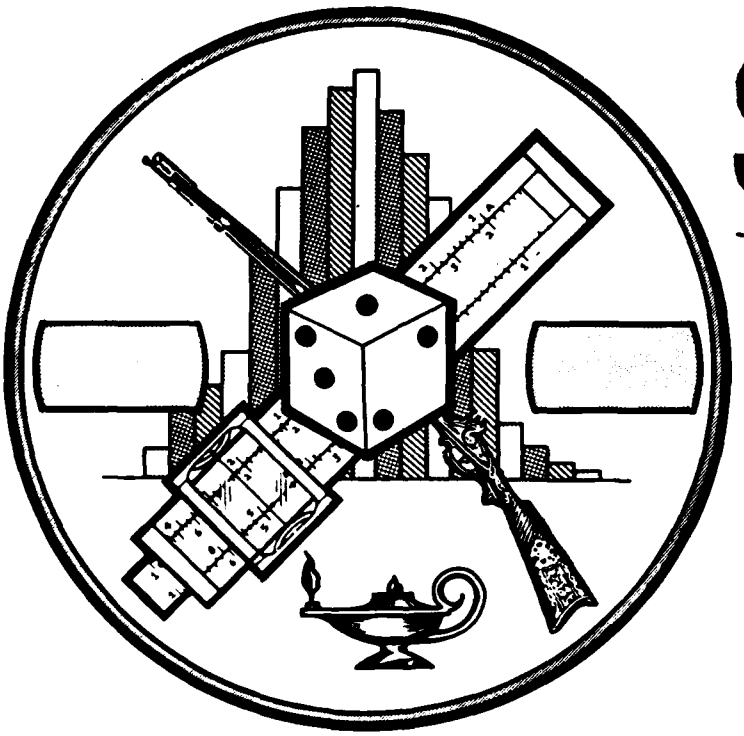

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COMBINED ARMS OPERATIONS RESEARCH ACTIVITY
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Major Steven R. Accinelli
Mrs. Martha L. Robinette
Major Jerome A. Jacobs

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US Army Combined Arms Operations Research Activity
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Fort Leavenworth, KS 66027-5200

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This report documents an analysis of the G3 section of U.S. Army corps and division main command posts (G3 Main). The G3 analysis, performed by the Combined Arms Operations Research Activity, identified and prioritized analytic aiding opportunities to support the G3 through the use of computer applications. The analysis and assessment process was based on the near-term (five-year) automated environment of main CPs and current U.S. Army doctrine. A structured functional analysis was performed to identify specific G3 Main tasks and products and then (continued)

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CONT

to assess opportunities to aid G3 performance. A prioritization methodology was refined and exercised to develop a recommended priority to conduct research and to develop analytic aids.

Technical Report CAORA/TR 13/85
December 1985

Combined Arms Operations Research Activity (CAORA)
Studies and Analysis Directorate
Fort Leavenworth, Kansas 66027-5200

G3 ANALYSIS

VOLUME II: APPENDIXES

by

MAJOR STEVEN R. ACCINELLI

MRS. MARTHA L. ROBINETTE

MAJOR JEROME A. JACOBS

ACN 70876

Approved By:

JAMES T. PITTMAN
Colonel, FA
Director, Studies and
Analysis Directorate

REED E. DAVIS, JR.
Deputy, CAORA

DAVID M. MADDOX
Brigadier General, USA
Commander, CAORA

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ABSTRACT

This report documents an analysis of the G3 section of U.S. Army corps and division main command posts (G3 Main). The G3 analysis, performed by the Combined Arms Operations Research Activity, identified and prioritized analytic aiding opportunities to support the G3 through the use of computer applications. The analysis and assessment process was based on the near-term (five-year) automated environment of main CPs and current U.S. Army doctrine. A structured functional analysis was performed to identify specific G3 Main tasks and products and then to assess opportunities to aid G3 performance. A prioritization methodology was refined and exercised to develop a recommended priority to conduct research and to develop analytic aids.

APPENDIX A

3 October 1984

PROJECT COORDINATION SHEET

FOR

COMMAND AND STAFF DECISION AIDS

I. TASK TITLE: Command and Staff Decision Aids SHORT TITLE: Command Decision Aids

II. PROPONENT ELEMENT:

U.S. Army Combined Arms Center
Fort Leavenworth, KS 66027-5220

POINT OF CONTACT:

Commander
USA CAC
ATTN: ATZL-CAC-CI (CPT Jack Tombrella)
Ft. Leavenworth, KS 66027-5220
Tel: (AV) 552-4837/5125
(C) (913) 684-4837

III. PROJECT ANALYTIC AGENT:

TCRA PROJECT LEAD:

Commander
USA CAORA
ATTN: ATOR-CAS-C (MAJ Jerome Jacobs)
Ft. Leavenworth, KS 66027-5220
Tel: (AV) 552-3595/5481
(C) (913) 684-3595/5481

PROJECT SUPPORT:

Director
USA TRASANA
ATTN: ATOR-TC (LTC Gleason)
White Sands Missile Range, NM 88002
Tel: (AV) 258-2406
(C) (505) 678-2406

IV. DESCRIPTION:

a. BACKGROUND. The Maneuver Control System (MCS) and other automated components of the U.S. Army Tactical Command Control System (C^2S) have evolved to a point which prompts the transition from a basic information system to a decision support system (DSS). Over the past four years, in a program of evolutionary development with intensive user participation, the MCS and TACIP initiatives have evolved to semi-mature automated information systems. Recent correspondence between Director, TCRA, Commander, CAC and Commander, TRADOC has led to the initiation of a project to incorporate command and staff decision aids in the tactical command and control system. Many potential aids appear to reside in research models maintained and operated within TRADOC's research community (TCRA). The Command Decision Aids Project initially seeks to transfer selected analytic applications from the research community to the operational community and to construct a mechanism for continued transfer of analytic techniques from TCRA to operational users in tactical units.

b. PURPOSE. The purpose of this project is to determine the feasibility of transfer of technical capability from TCRA to operational users. If this transfer is feasible then the project will result in a prototype mechanism for routine transfer of capability to support the evolutionary development of automated C^2 systems.

c. SCOPE. The initial effort (1 Sep 84 - 1 Sep 85) will result in the transfer of one or more analytic applications from TCRA to selected users, a program for Army-wide exercise of the transfer mechanism and an evaluation of the strengths and weaknesses of the transfer mechanism. The initial effort is restricted to an investigation of feasibility with limited resources consistent with current command guidance. The focus of the effort is to transfer existing analytic applications to appropriate applications in tactical units.

d. TIME FRAME. The time frame of the initial effort is 1 Sep 84 - 1 Sep 85. A decision briefing will be presented in Sep 85 to the project steering committee to review the results of the first year effort and to determine the level of resourcing for subsequent work in this area.

V. SCHEDULE AND TASKS:

a. Listed activities will perform the following:

(1) CACDA will:

(a) Establish formal arrangements for this project with selected tactical units representing the operational community.

(b) Gain CGSC commitment to support this project as the doctrinal focal point and subject matter experts.

(c) Gain AMC commitment to support this project to provide a means for transfer of decision aids into the software development cycle for objective automated C^2 systems.

(d) Develop and publish a management plan which provides detailed instructions for execution of the decision aids development mechanism.

(e) Assist user in identification of requirements.

(f) Establish criteria for acceptance of developed decision aids.

(g) Provide overall management of the decision aids project.

(2) TORA:

(a) CAORA will:

1 Serve as lead analytic agency in this project.

2 Identify potential applications for transfer which currently reside within CAORA.

3 Develop at least one decision aid based on a specific user requirement.

4 Provide technical assistance to CACDA during the development of a management plan.

5 Coordinate TORA efforts with CACDA, CGSC, AMC and users.

6 Provide input to CACDA for management updates and the Sep 85 Decision Briefing.

7 Document CAORA product(s).

(b) TRASANA will:

1 Provide resources to develop at least one decision aid based on a specific user requirement.

2 Identify potential applications for transfer which currently reside within TRASANA.

3 Coordinate efforts with CAORA and CACDA.

4 Provide input to CAORA for management updates and the Sep 85 Decision Briefing.

5 Document TRASANA product(s).

b. Schedule as follows:

7 Sep	Project Brief to MG Wishart
14-26 Sep	Observe TOC Operations at REFORGER
15 Oct	Users identified

15 Oct	TCRA Potential Applications Identified
20 Oct	CACDA/TCRA/User meetings to develop prioritized user requirements
Nov-Jan	TCRA Decision Aid Development (1st Iteration)
Jan	Initial Decision Aid Evaluation (dependent on complexity of requirement)
Feb	Management Review
March	Initiate development of management plan based on first iteration.
April	Subsequent Decision Aid Evaluation
June	Management Review
July - August	Finalize Management Plan and Initial Decision Aids
September	Management Review (Decision Briefing)

VI. RESOURCES.

a. CACDA's participation will require the following (Estimate):

(1) Manpower: 36 man months

(2) Computer: Assumes leased use of computer similar to user's system from Nov 84 - Jul 85.

(3) TDY FUNDS: 20K dollars

b. TRASANA's participation will require the following (Estimate):

(1) Manpower: 24 man months

(2) Computer: Assumes leased use of computer similar to user's system from Nov 84 - Jul 85.

(3) TDY FUNDS: 15K dollars

VII. DEPENDENCE ON EXTERNAL/INTERNAL EVENTS.

a. Schedules shown are dependent on user participation and subject matter expertise provided by CGSC.

b. Criteria for user should include consideration of maturity of automated C^2 system and geographical location.

VII. COORDINATION.

This study will be correlated with ACN 70876.

JEROME H. GRANRUD	RONALD G. MAGEE	GALE MATHIASEN
COL, FA	Dir, S&AD	Ch, C^{3}I Division
Dir, C^{3}I CACDA	CAORA	

APPENDIX B

G3 SECTION

B-1. G3 SECTION AT THE DIVISION MAIN COMMAND POST. The following is a list of soldiers who work in the G3 section of the heavy division main command post. It is derived from the current table of organization and equipment for a heavy division in the Army of Excellence and from FC 101-55: Corps and Division Command and Control.

TITLE	GRADE	MOS	NUMBER
G3	O5	11C00	1
ADA Officer (Plans)	O4	14B00	1
Assistant G3 Plans	O4	11C54	1
Assistant G3	O4	12A00	1
Assistant G3 Air	O4	15A00	1
Assistant Plans officer	O4	12A00	1
Counterintelligence Officer (Plans)	O4	36A00	1
Engineer Officer (Plans)	O4	21J00	1
Fire Support Officer (Plans)	O4	13A00	1
Intelligence Officer (Plans)	O4	35A00	1
Logistics Officer (Plans)	O4	92b00	1
Assistant Fire Support Officer (Plans)	O3	13A35	2
Deception Cell OIC	O3	11b35	1
EW Officer (Plans)	O3	37A00	2
Intelligence Officer (Plans)	O3	35A37	1
Chief Operations SGT	E9	19Z50	1
Logistics Operations SGT (Plans)	E8	76Z50	1
Operations SGT (Plans)	E8	19Z50	1
ADA Operations SGT (Plans)	E7	16H40	1
Assistant Operations SGT (Plans)	E7	19K40	1
Deception Cell NCOIC	E7	11B40	1
Engineer Operations SGT (Plans)	E7	12B40	1
G3 Air Operations SGT	E7	19K40	1
Fire Support SGT (Plans)	E6	13F30	1
Counterintelligence Agent	E5	97B20	1
EW Analyst	E5	97E20	1
Executive Administrative Assistant	E5	71C20	1
Intelligence Analyst	E5	96B20	1
Clerk/Typist	E4	71L10	1
Single Channel Radio Operator	E4	31C10	1
Single Channel Radio Operator	E3	31C10	1
	Total		33

B-2. DISTRIBUTION OF G3 SECTION AT THE DIVISION MAIN COMMAND POST. Soldiers who work in the G3 section at the main command post are distributed between the operations and plans cells. Lists of G3 personnel in each cell are shown below. This information is included in an example of main command post configuration in FC 101-55: Corps and Division Command and Control.

CURRENT OPERATIONS

TITLE	GRADE	MOS	NUMBER
G3	O5	11C00	1
Assistant G3	O4	12A00	1
Assistant G3 Air	O4	15A00	1
Chief Operations SGT	E9	19Z50	1
G3 Air Operations SGT	E7	19K40	1
Single Channel Radio Operator	E4	31C10	1
Single Channel Radio Operator	E3	31C10	1
		Total	7

PLANS

TITLE	GRADE	MOS	NUMBER
Assistant G3 Plans	O4	11C54	1
Assistant Plans Officer	O4	12A00	1
ADA Officer (Plans)	O4	14B00	1
Counterintelligence Officer (Plans)	O4	36A00	1
Engineer Officer (Plans)	O4	21J00	1
Fire Support Officer (Plans)	O4	13A00	1
Intelligence officer (Plans)	O4	35A00	1
Logistics Officer (Plans)	O4	92B00	1
Assistant Fire Support Officer (Plans)	O3	13A35	2
Deception Cell OIC	O3	11B35	1
EW Officer (Plans)	O3	37A00	2
Intelligence Officer (Plans)	O3	35A37	1
Logistics Operations SGT (Plans)	E8	76Z50	1
Operations SGT (Plans)	E8	19Z50	1
ADA Operations SGT (Plans)	E7	16H40	1
Assistant Operations SGT (Plans)	E7	19K40	1
Deception Cell NCOIC	E7	11B40	1
Engineer Operations SGT (Plans)	E7	12B40	1
Fire Support SGT (Plans)	E6	13F30	1
Counterintelligence Agent	E5	97B20	1
EW Analyst	E5	97E20	1
Executive Administrative Assistant	E5	71C20	1
Intelligence Analyst	E5	96B20	1
Clerk/Typist	E4	71L10	1
		Total	26

APPENDIX C

G3 MAIN CRITICAL TASKS

C-1. INTRODUCTION. Results of an analysis of critical tasks performed by the G3 at the corps and division main command posts (G3 Main) follow. Documentation of the tasks was accomplished using four references:

a. FM 101-5: Staff Organization and Operations, May 1984.

b. ARTEP 100-2: Division Command Group and Staff, 15 June 1978.

c. FC 101-55: Corps and Division Command and Control, 28 February 1985.

d. CAORA/TR-1/85: Division/Corps Information and Communication Flow Analysis, January 1985.

In FM 101-5, G3 tasks are described in section 3-6 of chapter 3, A C of S, G3, Operations, and in appendix A, Staff Relationsnips. In ARTEP 100-2, general task descriptions of division command group and staff are found in chapter 3, Training and Evaluation Outline, and specific G3 tasks are listed in appendix A, Staff Supplement. In FC 101-55, lists of common staff functions and specific G3 tasks appear in appendix F, Staff Battle Tasks. In CAORA TR 1-85, a list of corps and division command group and staff tasks appears in appendix 1 to annex B and is called CAORA's Hybrid Training Tasks. The CAORA list was developed in support of requirements for a corps training system. It also supports the Command Information Database (CID), based on corps and division tactical standing operating procedures (TSOP).

C-2. CONSTRAINTS. The analysis was performed with several constraints:

a. CAORA TR 1-85 is the only one of the four references that does not specify which tasks are performed by the G3, but rather lists tasks performed by the command group and staff. The CID, however, can be accessed to show tasks performed by the G3.

b. FM 101-5 applies to operations in garrison or in the field, in peace or in war, while the other references apply to combat situations.

c. ARTEP 100-2 contains division-level tasks, while FM 101-5, CAORA TR 1-85, and FC 101-55 contain tasks which apply to both corps and division staffs.

d. Of the four references, only FC 101-55 identifies at which command post (TAC, main, or rear) tasks are performed. The CID, however, can be accessed to show which of the CAORA tasks are G3 Main tasks.

e. FM 101-5 and ARTEP 100-2 provide descriptions of the tasks, whereas FC 101-55 and CAORA TR 1-85 contain only lists of tasks.

C-3. PROCEDURES. A list of tasks was compiled using all four references but ARTEP 100-2 and CAORA TP 1-85 were used primarily, with the ARTEP serving as the baseline guide. A total of 43 tasks were listed under seven functions of the G3; each function consists of the tasks listed under it. A comparison matrix was set up to show in which documents each task appears (denoted by an "X"); table C-1 shows the comparison matrix. In order to determine which tasks appear in which documents, a comparison was made, using the compiled list of tasks and tasks in each document. Note that only tasks were compared and not functions. Whenever the wording of an item in the list was not matched closely in the document being examined, the explanation of that item in the ARTEP was used as further clarification of what constitutes the task for the G3. The search for a match was then repeated. Following is a summary of specific procedures in the four comparisons:

a. In comparing the list to G3 tasks in FM 101-5, the material concerning the G3 section in chapter 3 was used primarily, but the descriptions in the G3 column of the staff relationships matrix in appendix A were also used. In this comparison, as well as in the other comparisons, unless the wording closely matched, the wording of the document had to indicate direct correlation to the implication of the task as explained in the ARTEP. For example, task 2a, "Prepare analysis of area of operations," is shown in FM 101-5 in the staff matrix as a G2 task, while for the remainder of the staff it appears as "IPB products are used by all staff officers to estimate the effect of the enemy, weather, and terrain on their activities." "Prepare" implies action, whereas "used by" does not. Therefore, no "X" appears in the comparison matrix to indicate the task is a G3 task according to FM 101-5. As further illustration, task 2b, "Formulate the intelligence collection plan," is clarified in the ARTEP as this G3 task: "Advises on tentative courses of action and on operations plan. Recommends to G2 EEI on enemy capabilities, vulnerabilities, and characteristics of area of operations having major effect on accomplishment of the mission." This clarified task implies action; it appears in FM 101-5 as a G3 task, and an "X" appears in the comparison matrix.

b. As would be expected, a comparison of the compiled tasks and G3 tasks in ARTEP 100-2 was relatively simple. According to the procedure just described, however, task 2a, "Prepare analysis of area of operations," is not given an "X" in the ARTEP column of the comparison matrix. The ARTEP reads, for the G3: "The analysis of area of operations is used by all staff officers for estimation of effect on activities with which they are concerned." It is another case of action implied in the task but no similar action implied for the G3.

c. The comparison of the compiled list of tasks to G3 tasks in FC 101-55 was fairly straightforward. Clarification in the ARTEP was helpful, but some "best guessing" inevitably occurred, such as with task 1c, "Analyze and implement training programs." This task was determined to be implied in the G3 task, "Recommend augmentation force requirements" in FC 101-55 and given an "X" in the comparison matrix.

d. Before the compiled tasks were compared to CAORA's hybrid training tasks, tasks in the CAORA list which are performed by the G3 were identified. CID was accessed and computer printouts of the tasks performed by the G3 at

Corps and Division Main were obtained. Once G3 tasks were identified in the CACRA list, a straightforward comparison of the compiled tasks and the CACRA G3 tasks was made.

e. FC 101-55 also contains appendix G, Division Commander's Critical Information Requirements (CCIR), which was to be an additional reference for comparison. It became evident, however, that no satisfactory criterion existed for making a comparison of the compiled tasks and the CCIR. The tasks are performance requirements, while the CCIR are information requirements. It was decided, therefore, to use the CCIR later in the study to help prioritize G3 Main analytic aiding opportunities.

Table C-1. Comparison matrix showing G3 critical tasks and supporting documents (continued on following pages)

TASK	FM 101-5	ARTEP 100-2	FC 101-55	CAORA TR 1-85
1. Develop plans based on missions.				
a. Prepare and communicate plans and orders.	X	X	X	X
b. Organize and equip units for combat.	X	X	X	X
c. Analyze and implement training programs.	X	X	X	
d. Plan for employment of fire support.	X	X	X	X
e. Plan for employment of nuclear and chemical weapons.	X	X	X	X
f. Integrate CSS into scheme of maneuver.	X	X	X	X
g. Plan for employment of EW.	X	X	X	X
h. Develop communications plan.	X	X	X	X
i. Reinforce terrain; plan obstacles and M-CM-S operations.[1]	X	X	X	X
j. Establish air defense priorities	X	X	X	X

[1] Wording is adapted from CAORA item except that "M-CM-S" (mobility-countermobility-survivability) from FC 101-55 was used instead of "mobility." This task includes "Develop division river crossing plan" from ARTEP 100-2.

Table C-1. (continued)

TASK	FM 101-5	ARTEP 100-2	FC 101-55	CAORA TR 1-85
k. Integrate USAF assets into operations plans.	X	X	X	X
l. Integrate Army Aviation assets into operations plans.	X	X	X	X
2. Initiate intelligence preparation of the battlefield.[2]				
a. Prepare analysis of area of operations.				X
b. Formulate the intelligence collection plan.	X	X		X
c. Prepare the reconnaissance, surveillance, and target acquisition plans.	X	X		X
d. Allocate intelligence resources.				X
3. Control and coordinate combat operations.				
a. Implement and update plans and orders.	X	X	X	X

[2] Although the overall function is not a G3 responsibility, some of its tasks are performed by the G3, so the function is retained in the list for clarity.

Table C-1. (continued)

TASK	FM 101-5	ARTEP 100-2	FC 101-55	CAORA TR 1-85
b. Direct combat operations and coordinate all command post functions.	X	X	X[3]	X
c. Supervise execution of operations to ensure compliance with commander's concept and decisions.	X	X	X	X
d. Evaluate TSOP.	X		X	X
e. Maintain current situation status.[4]	X	X	X	X
f. Concentrate/shift combat power.	X	X	X	X
g. Conduct PSYOP and civil-military operations.	X[5]	X	X[6]	
n. Coordinate airspace management.	X	X	X	X
i. Direct/coordinate conduct of EW.	X	X	X	X
j. Conduct deception operations.	X		X	X
k. Coordinate NBC offensive operations.	X		X	
4. See the battlefield and the enemy.				
a. Collect intelligence information.	X	X	X	X

[3] FC 101-55 indicates that the G3 directs combat operations at the main CP, but the Chief of Staff coordinates the command post functions.
[4] Wording is from FC 101-55 and includes status of resources, operations estimate, and intelligence estimate from ARTEP 100-2.
[5] FM 101-5 assigns supervision of PSYOP to the G3, but CMO to the G5.
[6] FC 101-55 indicates the G3 conducts PSYOP, but the G5 coordinates CMO.

Table C-1. (continued)

TASK	FM 101-5	ARTEP 100-2	FC 101-55	CAORA TR 1-85
b. Analyze/evaluate enemy capabilities.	X	X	X	X
c. Determine enemy courses of action, combat effectiveness, and vulnerabilities.	X	X	X	X
d. Disseminate intelligence, intelligence estimates, and combat information.			X	X
5. React to enemy NBC operations.				
a. React to nuclear attack.	X	X	X	X
b. React to chemical or biological attack.	X	X	X	X
c. Conduct NBC defensive operations.	X		X	X
6. Secure and protect the corps/ division.				
a. Develop and implement OPSEC programs.	X	X		X
b. Conduct offensive counter-intelligence operations.	X			X
c. React to enemy EW.	X	X	X	X
d. Conduct RACO.	X	X		X
e. React to enemy air attack.	X	X		X

Table C-1. (concluded)

TASK	FM 101-5	ARTEP 100-2	FC 101-55	CAORA TR 1-85
7. Provide for CSS.				
a. Arm the system.	X	X	X	X
b. Fuel the system.	X	X	X	7
c. Fix the system.	X	X	X	X
d. Man the system and support the troops.	X	X	X	X

7 The CID shows no G3 action for "Fuel the system."

APPENDIX D

G3 FUNCTION AND TASK REFERENCE SHEETS

D-1. INTRODUCTION. A reference sheet was prepared for each G3 main function or task in the comparison matrix (appendix C). Each reference sheet describes the task as reported in doctrine or by subject-matter experts. This part of the G3 analysis was done to help develop expertise. The resulting task descriptions were used to help identify G3 Main analytic aiding opportunities.

D-2. METHODOLOGY. For a given task, a description of G3 actions relative to the task in ARTEP 100-2 was written and then supplemented by information from FM 101-5. FC 101-55 and CAURA TR 1-85 listed tasks without elaboration and therefore did not provide many task decompositions and only occasionally provided subtasks. Other pertinent documents such as chemical and engineer ARTEPs were sometimes used. Subject-matter experts were also consulted. The result is the following lists of subtasks which facilitate understanding of the G3 tasks.

D-3. G3 FUNCTION AND TASK REFERENCE SHEETS. The following reference sheets show each function or task, its supporting documents, and a task decomposition.

1. FUNCTION: Develop plans based on missions.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5.

3. FUNCTION DECOMPOSITION:

   a. Prepare and communicate plans and orders.

   b. Organize and equip units for combat.

   c. Analyze and implement training programs.

   d. Plan for employment of fire support.

   e. Plan for employment of nuclear and chemical weapons.

   f. Integrate CSS into scheme of maneuver.

   g. Plan for employment of EW.

   h. Develop communications plan.

   i. Reinforce terrain; plan obstacles and M-CM-S operations.

   j. Establish air defense priorities.

   k. Integrate USAF assets into operations plans.

   l. Integrate Army Aviation assets into operations plans.

G3 TASK REFERENCE SHEET 1a

1. TASK: Prepare and communicate plans and orders.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5, FC 71-100.

3. TASK DECOMPOSITION:

a. Based on the commander's planning guidance and on information received from other staff officers, prepare the operation appraisal, which culminates in a recommended course of action for accomplishment of the mission.

b. In developing plans, consider friendly and enemy force capabilities and vulnerabilities; range, accuracy, and destructive effects of respective weapon systems; time available; and the environment.

c. Conduct tactical planning, including supervision and coordination of the various supporting plans which become component parts of the overall tactical plan.

d. After command approval, publish the operation plan or order. Prepare and dispatch the operation plan/operation order (OPLAN/OPORD) in enough time for it be executed by subordinate units.

e. Provide guidance to other staff officers for preparation of plans.

f. Do road movement planning and, if appropriate, make a road movement table. Tactical marches are conducted in a combat-ready posture. Tactical movements assume contact with the enemy will occur in some form enroute or soon after arrival at the destination. The G3 is responsible for staff supervision of tactical movements, while the G4 is responsible for staff supervision of administrative troop movements.

g. Issue warning orders to subordinate units in a timely (one-half of available time) and succinct manner. When required, disseminate completed plans to subordinate units in a timely manner.

h. Prepare such alternate operation plans as may be required.

i. Employ alternate communications when necessitated by enemy radio electronic combat (REC). As much as possible, use mission type orders, prearranged control measures, and contingency plans which decentralize authority to execute actions based on the occurrence of an event in order to minimize the need for continuous communications.

j. Ensure that all plans consider the overall security of the command, including such matters as combat patrolling and tactical cover and deception.

k. Recommend allocation and priorities for personnel, supplies, and equipment for combat and combat support units.

l. Establish the basic load (nonnuclear ammunition) for combat and combat support units.

m. In preparing plans, provide for massing friendly air/land combat power at the critical time and place to achieve, as a general guide:

Offense: A friendly/enemy combat ratio of 5:1 or better at the point of decision.

Defense: A friendly/enemy combat ratio of no worse than 1:3 at the point of enemy main attack.[1]

Retrograde operations: Sufficient friendly combat power to prevent an enemy penetration through the brigade rear boundary, prevent enemy disruption of continuity of movement , and prevent encirclement of friendly forces.

n. Since the planning and estimating process is continuous, constantly update plans. Make evaluation throughout preparation for and execution of the battle, and do not complete evaluation until the mission is terminated. Satisfactory accomplishment of this task is determined by successful accomplishment of the mission with minimal degradation of friendly combat power.

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[1] These force ratio guidelines for offense and defense are taken from ARTEP 100-2.

G2 TASK REFERENCE SHEET 15

1. TASK: Organize and equip units for combat.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5.

3. TASK DECOMPOSITION:

a. Compile and maintain the troop list to include continual review and revision to ensure that the number and type of units assigned are those which can best accomplish and support the command mission.

b. Recommend the organization and equipping of units: estimate numbers and types of units to be organized and priority for phase-in or replacement of personnel and equipment in those units.

c. Recommend assignment or attachment of combat, combat service support units or teams, and unit replacements; assign such units within the command in accordance with requirements of the situation.

d. Receive and process assigned units or teams to include such orientation, training, and reorganization as may be required. Prepare plan to activate and deactivate units. Prepare plans for mobilization and demobilization.

e. This task is successfully accomplished if the unit prioritizes assignment of replacements to subordinate units and task organizes in a manner which will mass superior combat power at the critical time and place.

Offense: As a general guide, the force ratio (relative combat power) of the friendly force to the enemy force should be 5:1 or better at the point of the main effort.

Defense: As a general guide, the force ratio (relative combat power) of the friendly force to the enemy force should be no worse than 1:3 at the point of the enemy main attack.[2]

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[2] Ibid.

G3 TASK REFERENCE SHEET 1C

1. TASK: Analyze and implement training programs.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5.

3. TASK DECOMPOSITION:

a. Identify training requirements based on combat missions and the training status of the unit. Plan and implement special training programs which are tailored to specific needs of units or specialties.

b. Ensure that training requirements for combat are oriented on conditions and standards of combat.

c. Prepare and supervise execution of training programs, directives, and orders; supervise the planning and conduct of field exercises. Training should be decentralized, designed to improve combat effectiveness and readiness, and should not remove maneuver units from availability for commitment.

d. Determine requirements for and allocation of training resources, including ammunition for training, ranges, facilities, and training aids and devices.

e. Plan, conduct, and coordinate training inspections, tests, and evaluations.

f. Organize and conduct internal schools, and obtain and allocate quotas for external schools.

g. Compile training records and reports as appropriate.

h. Maintain the unit readiness status of each unit in the command. Successful accomplishment of this task (1c) is measured by an analysis of current proficiency of individuals and units and training programs which are designed to correct combat deficiencies.

i. Schedule, in coordination with the G4, new equipment training teams to support arrival of new materiel.

j. Plan the budget for training and monitor use of training funds to support training programs.

G? TASK REFERENCE SHEET 1:

1. TASK: Plan for employment of fire support.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5, FC 71-100.

3. TASK DECOMPOSITION:

a. Integrate fire support into operations.

b. Supervise fire support planning. Assist the fire support element in determining what to do with information received about high-payoff targets; inherent in the decision is the commitment of support to the overall battle.

c. Receive the fire support plan from the fire support coordinator (FSCOORD); review to ensure that it is in consonance with command guidance and is compatible with the planned scheme of maneuver or scheme of defense. (The cycle of observation, decision, and action with regard to target acquisition continues throughout the attack, and the G3, division artillery commander, G2, and air liaison officer are actively involved in this process.)

d. Integrate the fire support plan into the OPLAN/OPORD as the fire support annex.

e. Recommend allocations of nuclear and chemical weapons to subordinate units.

f. Determine the prescribed nuclear load (PNL) and the prescribed nuclear stockage (PNS) for all assigned and attached nuclear-capable units based on FSCOORD recommendations.

g. Determine the number of chemical weapons by type to be carried by each assigned and attached delivery unit based on FSCOORD and chemical officer's recommendations.

h. Fire support planning is successful when counterfire programs are initiated and when all available means (organic and supporting) to include close air support (CAS) and naval gunfire (NGF) are planned jointly and concurrently with maneuver. Support must provide proportionate weight to the main attack (most vulnerable area) and be available in sufficient amounts to provide the desired combat ratio.

G3 TASK REFERENCE SHEET 1a

1. TASK: Plan for employment of nuclear and chemical weapons.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5, ARTEP 3-387.

3. TASK DECOMPOSITION:

a. Exercise coordinating staff supervision over the prediction of fallout from friendly employed nuclear weapons and downwind hazard from friendly chemical fires.

b. Incorporate fallout predictions and G2 appraisal of the effects of fallout on the area of operation and on enemy capabilities into the operation appraisal.

c. Prepare recommendations regarding alternate tactical course of action to be adopted, if required.

d. Plan for employment of nuclear and chemical weapons.

e. Recommend employment of nuclear and chemical weapons.

f. Request nuclear and chemical release, and disseminate notification of release.

g. Position organic and attached field artillery to support nuclear/chemical fires.

h. Obtain target analysis and damage assessment for nuclear and chemical weapons employed on surface targets by friendly agencies.

i. Disseminate nuclear strike warning as required.

j. Ensure that procedures to be used in requesting release of nuclear and chemical weapons are clearly understood.

k. Based on analysis of friendly and enemy capabilities and dispositions, the command group must plan the most opportune times and locations for employment of chemical and nuclear weapons; employment plans must ensure maximum destruction of enemy forces and negligible effects on friendly forces, the civilian population, and future operations.

G3 TASK REFERENCE SHEET 1f

1. TASK: Integrate CSS into scheme of maneuver.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5, FM 100-15.

3. TASK DECOMPOSITION:

a. Recommend allocation and priorities for equipment and supplies having an impact on the training or tactical mission.

b. Recommend prescribed loads for equipment and supplies pertaining to the training or tactical mission.

c. Receive the available supply rate from the G4; provide G4 with required supply rate for subordinate commands.

d. Provide G4 with information of anticipated attachments, assignments, or detachments of units for logistic support planning purposes.

e. Provide G4 with training requirements or tactical courses of action to assist in determining logistic support tasks.

f. Recommend special ammunition load (SAL); keep informed of changes to SAL.

g. Provide G4 with allocation of nuclear weapons.

h. Provide tactical troops for security of nuclear weapons, when needed.

i. The combat service support (CSS) command element, in coordination with the division command group/staff, develops plans and procedures for logistical requirements to meet all approved contingency plans and operations. CSS must be an inherent part of the scheme of maneuver in that CSS resources are positioned in close proximity to supported combat systems, commensurate with acceptable risks. Successful accomplishment depends on the ability to provide CSS at the right time and place and in the right amounts to support combat effectiveness throughout the battle.

G3 TASK REFERENCE SHEET 1

1. TASK: Plan for employment of EW.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5.

3. TASK DECOMPOSITION:

a. Exercise staff supervision over electronic warfare (EW) activities.

b. Plan and supervise, in coordination with the G2, all EW activities in support of tactical operations.

c. Prepare and coordinate the EW annex to plans and orders.

d. Determine requirements to support all EW activities.

e. Recommend priorities to the commander.

f. Coordinate jamming support.

g. Establish priority targets for electronic countermeasures (ECM) and publish control measures.

h. Position ECM assets to inhibit enemy command and control and aid friendly deception operations. Develop electronic counter-countermeasures (ECCM), including alternate methods of communications, and integrate into plans and orders.

i. Supervise and coordinate, with the G2 and communications and electronics (C-E) officer, the evaluation of meaconing (deception through the use of false beacon signal), intrusion, jamming, and interference (MIJI) reports.

j. Exercise coordinating staff supervision over the EW section.

k. Evaluate the performance of EW.

63 TASK REFERENCE SHEET No

1. TASK: Develop communications plan.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5.

3. TASK DECOMPOSITION:

a. Establish priorities for communications to support tactical operations.

b. Review the signal operation plans for communication support of the tactical operations to ensure necessary support in accordance with established priorities.

c. Provide signal guidance to C-E.

G3 TASK REFERENCE SHEET #

1. TASK: Reinforce terrain; plan obstacles and M-CM-S operations.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5, FC 101-55, FC 71-100, ARTEP 5-145.

3. TASK DECOMPOSITION:

a. Prepare obstacle plan in coordination with other staff members. Develop obstacle plan in coordination with weapon systems capabilities and the tactical concept of operations.

b. Recommend priorities for allocating critical resources of the command, including time, personnel, supplies, and equipment.

c. With the G5, utilize indigenous labor resources to accomplish those authorized tasks for which they are best suited so that the maximum number of elements of the engineer battalion can be used to accomplish more critical combat-related tasks.

d. Recommend boundaries and other control measures.

e. Designate location of obstacles essential to the execution of the tactical plan. Establish zones of priority for obstacle emplacement.

f. Monitor engineer unit readiness.

g. Determine engineer support requirements.

h. With the engineer, plan mobility-countermobility-survivability (M-CM-S) operations.

i. With the G2, plan deception operations.

j. Provide guidance in preparation of the engineer annex and, in particular, the obstacle and denial appendixes to the engineer annex.

k. Use resources to accomplish both maneuver and support, including resources used for deception purposes.

l. Using available intelligence and the mission requirements, designate general river-crossing sites.

m. Prepare river-crossing plan in coordination with other staff members. Develop tactical plans for securing and protecting river-crossing sites, including concealment and deception techniques.

G2 TASK REFERENCE SHEET 1C

1. TASK: Establish air defense priorities.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5.

3. TASK DECOMPOSITION:

a. Supervise air defense artillery (ADA) fire support planning.

b. Recommend allocation of air defense to most critical area.

c. Receive the ADA fire support plan from the division airspace management element (DAME), and review the plan to ensure that it is in consonance with command guidance and compatible with the planned scheme of maneuver or scheme of defense.

d. Integrate the ADA fire support plan into the operation plan as the ADA fire support annex.

G.3 TASK REFERENCE SHEET 1.

1. TASK: Integrate USAF assets into operations plans.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5.

3. TASK DECOMPOSITION:

a. Plan and coordinate division close air support (CAS), and suballocate CAS assets.

b. Use of allocated Air Force (AF) assets in achieving division objectives should be an innerent part of the operations plans. Close monitoring of the availability and capability of specific Air Force resources and timely planning for their utilization by the command group is a necessity. Successful accomplishment of this task is attained if available AF assets in the areas of reconnaissance, airlift, and CAS are fully utilized in support of division objectives. When the allocation of AF resources are insufficient for division requirements, proper actions need to be taken by the command group to have either adequate AF assets released to the division or alternative plans available to compensate for the deficiencies.

G3 TASK REFERENCE SHEET 1

1. TASK: Integrate Army aviation assets into operations plans.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5.

3. TASK DECOMPOSITION:

a. Integrate Army Aviation into division plans and operations.

b. Coordinate airspace control within the area of operations.

c. Exercise staff supervision, through the G3 air, of the airspace management element (AME).

d. Successful accomplishment of this task is attained if available Army Aviation air assets are considered and utilized in accomplishment of division missions and objectives that can best be performed by Army Aviation.

G3 FUNCTION REFERENCE SHEET 2

1. FUNCTION: Initiate intelligence preparation of the battlefield.

2. SUPPORTING DOCUMENTS: N/A.

3. FUNCTION DECOMPOSITION: This function is not described in FM 101-5 or ARTEP 100-2 but may be decomposed from other appropriate manuals. However, the function name was deemed adequate for the purpose of assessing analytic aiding opportunities for the G3.

G3 TASK REFERENCE SHEET 2a

1. TASK: Prepare analysis of area of operations.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5.

3. TASK DECOMPOSITION: Intelligence preparation of the battlefield (IPB) products such as analyses of area of operations are used by all staff officers to estimate the effect of the enemy, weather, and terrain on their activities.

G2 TASK REFERENCE SHEET 1b

1. TASK: Formulate the intelligence collection plan.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5.

3. TASK DECOMPOSITION:

a. Advise on tentative courses of action and on operations plan.

b. Recommend to G2 the priority intelligence requirements (PIR) on enemy capabilities, vulnerabilities, and characteristics of area of operations having major effect on accomplishment of the mission.

c. The collection plan must identify the critical intelligence requirements of the unit, be oriented toward "all source" collection, and set in motion actions which will answer the majority of the unit's priority or other intelligence requirements in time to mass combat power at critical times and locations.

G3 TASK REFERENCE SHEET 2c

1. TASK: Prepare the reconnaissance, surveillance, and target acquisition plans.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5.

3. TASK DECOMPOSITION:

a. Share use of air request and information nets and spot report receivers.

b. Coordinate with offensive air missions.

c. Recommend basic and frontline coverage.

d. Designate units for conduct of surveillance over enemy.

e. Furnish information on locations of own forces and operation plans.

f. Designate required target characteristics information.

g. Make recommendations as to target characteristics and target development requirements.

h. Evaluate potential targets developed by G2; make general target analyses.

i. The reconnaissance, surveillance, and target acquisition plans must complement and extend the intelligence collection plan by providing a continuous all-weather, comprehensive surveillance of the battlefield, including the extent of tactical intelligence (TI) zone 3 (TI zone 3=0 to 150 km forward of front line of own troops (FLOT)). This task is successfully accomplished if all significant enemy targets are detected prior to decisive or surprise damage to the division.

G3 TASK REFERENCE SHEET 2.1

1. TASK: Allocate intelligence resources.

2. SUPPORTING DOCUMENTS: N/A.

3. TASK DECOMPOSITION: This task is not described in FM 101-5 or ARTEP 100-2 but may be decomposed from other appropriate manuals. However, the task name was deemed adequate for the purpose of assessing analytic aiding opportunities for the G3.

1. FUNCTION: Control and coordinate combat operations.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5.

3. FUNCTION DECOMPOSITION:

a. Implement and update plans and orders.

b. Direct combat operations and coordinate all command post functions.

c. Supervise execution of operations to ensure compliance with commander's concept and decisions.

d. Evaluate TSOP.

e. Maintain current situation status.

f. Concentrate/shift combat power.

g. Conduct PSYOP and civil/military operations.

h. Coordinate airspace management.

i. Direct/coordinate conduct of EW.

j. Conduct deception operations.

k. Coordinate NBC offensive operations.

GO TASK REFERENCE SHEET 3a

1. TASK: Implement and update plans and orders.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5.

3. TASK DECOMPOSITION:

a. Implement plans and orders in accordance with the commander's guidance and concept of operations and in time to provide coordinated execution.

b. Maintain a current operations estimate.

c. Maintain the current friendly situation and unit status.

d. Update plans and orders to exploit changes in the enemy or friendly situation changes in the weather, or previously unknown information concerning the terrain.

e. Prepare such alternate operations plans as may be required.

f. Provide guidance to other staff officers for preparation of plans.

g. Supervise the preparation of fragmentary orders (FRAGOs).

G3 TASK REFERENCE SHEET 05

1. TASK: Direct combat operations and coordinate all command post functions.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5.

3. TASK DECOMPOSITION:

a. Maintain a current operations appraisal.

b. Maintain the current situation and status of resources.

c. Monitor and recommend fire support and ADA planning and implementation/changes in accordance with the tactical situation.

d. Maintain adequate communications with subordinate units and disseminate critical information in a timely manner.

e. Organize for continuous (day/night) operations.

f. Ensure that all command posts are capable of assuming direction of the battle.

g. This task is accomplished successfully if the unit achieves the desired combat ratio at the critical time and location to accomplish the mission. As a general guide, the force ratio (relative combat power) of the friendly force to the enemy force should be:

Offense: 5:1 or better at the point of the main effort.

Defense: No worse than 1:3 should be concentrated at the point of the enemy main attack. [3]

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3 Ibid.

G3 TASK REFERENCE SHEET 3C

1. TASK: Supervise execution of operations to ensure compliance with commander's concept and decisions.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5.

3. TASK DECOMPOSITION:

a. Prepare, coordinate, authenticate, and publish operation plans and orders, including tactical movement orders.

b. Review plans and orders of subordinate units.

c. Coordinate all aspects of maneuver.

d. Recommend integrated schemes of tactical maneuver.

e. Ensure that rear area protection (RAP) plans of base commanders have been reviewed for their compatibility with the primary mission of the command and their tactical adequacy.

f. Receive input from the G4 and other staff officers concerning area damage control (ADC) plans; ensure that ADC plans of subordinate units have been reviewed to ensure their adequacy and also to ensure their compatibility.

g. Coordinate immediate CAS request.

G3 TASK REFERENCE SHEET 3d

1. TASK: Evaluate TSOP.

2. SUPPORTING DOCUMENT: FM 101-5.

3. TASK DECOMPOSITION:

a. Prepare, authenticate, and publish the overall command standing operating procedures (SOP) with contributions from other staff sections.

b. Conduct mission analysis.

c. Maintain a current operations estimate.

d. Maintain the current friendly situation and unit status.

e. Monitor and recommend fire support planning and implementation/changes in accordance with the tactical situation.

f. Prepare operational records and reports.

1. TASK: Maintain current situation status.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5.

3. TASK DECOMPOSITION:

   a. Conduct mission analysis.

   b. Maintain a current operations estimate.

   c. Maintain the current friendly situation and unit status.

1. TASK: Concentrate/shift combat power.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5.

3. TASK DECOMPOSITION:

a. Conduct mission analysis.

b. Maintain a current operations estimate.

c. Maintain the current friendly situation and unit status.

d. Recommend priorities for allocating critical resources of the command.

e. Use resources to accomplish both maneuver and support.

f. Recommend task organization and assign missions to subordinate elements of the command.

g. Recommend augmentation force requirements.

h. Receive units, detachments, or teams; orient, train, and reorganize them as necessary.

i. Assign, attach, and detach units, detachments, or teams.

j. Coordinate all aspects of maneuver with support.

k. Recommend integrated schemes of tactical maneuver.

l. Monitor and recommend ADA and fire support planning and implementation/ changes in accordance with the tactical situation.

m. Plan for employment of nuclear and chemical weapons.

n. Plan and coordinate TACAIR support.

o. Coordinate immediate CAS request.

p. Plan for joint air attack team (JAAT) operations.

q. Supervise coordination of airspace utilization.

r. Plan for employment of EW.

s. Integrate engineer support into tactical operations.

t. Integrate PSYOP and combat operations.

u. Recommend boundaries and other control measures.

G2 TASK REFERENCE SHEET

1. TASK: Conduct PSYOP and civil/military operations.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5.

3. TASK DECOMPOSITION:

a. Maintain a current operations estimate.

b. Maintain the current friendly situation and unit status.

c. Exercise staff supervision over psychological operations (PSYOP) activities.

d. Prepare, supervise, and disseminate PSYOP plans, directives, orders, and requests in support of tactical operations.

e. Prepare the PSYOP estimate.

f. Assist in coordination of allied PSYOP.

g. Determine requirements to support all PSYOP activities.

h. Request additional PSYOP units as required.

i. Establish and allocate priorities for combat, aviation, and logistic support of PSYOP.

j. Plan and supervise execution of PSYOP in support of civil information program.

k. Maintain close and continuous coordination with the G5.

l. Receive from the G2 the effectiveness of operations estimate and themes for development.

m. Evaluate, in coordination with the G2 and the G5, enemy PSYOP efforts and the effectiveness of friendly PSYOP on target groups. Advise on the susceptibility of the civil population to the various propaganda themes and, based on this knowledge of the civilian reaction in the area of operations, develop appropriate propaganda or counterpropaganda themes.

n. The command group is successful in accomplishing this task if susceptible target groups (enemy, neutral, or friendly) are targeted and react in a manner favorable to the conduct of combat operations. A majority of the PSYOP objectives should be achieved.

G3 TASK REFERENCE SHEET 3F

1. TASK: Coordinate airspace management.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5, FC 71-100.

3. TASK DECOMPOSITION:

a. Coordinate all aspects of maneuver with support, including other service components, both forward and in the rear, and coordinate the use of airspace by all agencies.

b. Ensure that combat, combat support, and CSS aerial operations are in accordance with the commander's guidance and concept of operations.

c. Exercise staff supervision, through the G3 Air, of the AME.

d. This task is successfully accomplished if the airspace over the area of operations is available for simultaneous use without unnecessary restrictions or losses to friendly airspace users.

e. Successful airspace utilization will adequately support the battle and fulfill unplanned requirements.

G3 TASK REFERENCE SHEET 71

1. TASK: Direct/coordinate conduct of EW.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5, FC 71-100.

3. TASK DECOMPOSITION:

a. Maintain a current operations estimate.

b. Maintain the current friendly situation and unit status.

c. Coordinate all aspects of maneuver with support.

d. Exercise staff supervision over the EW sections and activities.

e. Plan and supervise, in coordination with the G2, all EW activities in support of tactical operations, with empnasis on the offensive application of EW.

f. Prepare and coordinate the EW annex to plans and orders.

g. Determine requirements to support all EW activities.

h. Supervise and coordinate, with the G2 and the communications and electronics (C-E) officer, the evaluation of meaconing (deception through the use of false beacon signal), intrusion, jamming, and interference (MIJI) reports. The G2 develops the required intelligence database, and the division C-E officer coordinates defensive EW in order to ensure that friendly electronic freedom of action is retained while denying it to the enemy.

i. Establish priority targets for electronic countermeasures (ECM) and publish control measures.

j. A key to successful EW operations is to focus or mass assets to support the scheme of maneuver rather than piecemeal the assets, with protection of the friendly command and control system being the first priority.

k. The command group is successful in the direction and coordination of EW if enemy electromagnetic emitters are detected and located in time for friendly elements to target and neutralize them, to exploit enemy vulnerabilities, and to protect friendly elements from surprise; if enemy emitters and receivers are disrupted at critical times and locations; and if enemy receivers are deceived when the commander's concept of operations directs deception operations.

l. Defensive EW is successful if, when enemy radio-electronic combat (REC) tactics are employed, friendly communications continue due to effective electronic countercountermeasures (ECCM) or utilization of planned alternate means of communication.

G3 TASK REFERENCE SHEET 3-

1. TASK: Conduct deception operations.

2. SUPPORTING DOCUMENT: FM 101-5.

3. TASK DECOMPOSITION:

a. Exercise staff supervision over deception activities.

b. Determine requirements and/or opportunities for deception operations in coordination with the G2, and recommend the deception objective.

c. Recommend the deception story in coordination with the G2.

d. Determine and coordinate deception measures.

e. Prepare the deception annex to plans and orders.

63 TASK REFERENCE SHEET 3k

1. TASK: Coordinate NBC offensive operations.

2. SUPPORTING DOCUMENTS: FM 101-5, FC 71-100, ARTEP 3-337.

3. TASK DECOMPOSITION:

a. Recommend integrated schemes of tactical maneuver and/or dispositions and fires, including nuclear and chemical fires. Corps is the initiating and control headquarters for chemical plans. The detailed planning and coordination is done at division.

b. Recommend priorities of targets to be attacked.

c. Recommend boundaries and other control measures.

d. Assist nuclear, biological, and chemical element (NBCE) to identify friendly units best suited for specific missions because of previous radiation exposure. Identify units that border between combat effective and combat ineffective; assess risks of committing them; and recommend employment limitations, if any. Assess contaminated areas, identified by units, in order to determine their effect on current and future operations; decide whether to cross or bypass the area; and provide chemical mission-oriented protective posture (MOPP) guidance to subordinate units.

e. Integrate fire support into operations.

f. Receive the fire support plan from the FSCOORD; review to ensure that it is in consonance with command guidance and is compatible with the planned scheme of maneuver or scheme of defense; integrate the fire support plan into the OPLAN/OPORD as the fire support annex.

g. Integrate chemical fires into operations in response to enemy first use.

h. Recommend allocation of nuclear and chemical weapons to subordinate units.

i. Specify defeat criteria.

j. Determine the prescribed nuclear load (PNL) and the prescribed nuclear stockage (PNS) for all assigned and attached nuclear-capable units based on FSCOORD recommendations.

k. Determine the number of chemical weapons by type to be carried by each assigned and attached delivery unit based on FSCOORD and chemical officer's recommendations.

l. Request nuclear and chemical release and disseminate notification of release.

m. Disseminate nuclear STANEWARN messages as required over command, secure nets.

n. Predict fallout from friendly employment of nuclear weapons.

o. Predict downwind hazard from friendly chemical fires.

p. Plan for protection of the force from enemy chemical-biological weapon effects.

q. Maintain the radiation exposure status of the command; recommend troop safety criteria and operation exposure guide; and recommend the appropriate MOPP for the command.

1. FUNCTION: See the battlefield and the enemy.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5.

3. FUNCTION DECOMPOSITION:

a. Collect intelligence information.

b. Analyze/evaluate enemy capabilities.

c. Determine enemy courses of action, combat effectiveness, and vulnerabilities.

d. Disseminate intelligence, intelligence estimates, and combat information.

G3 TASK REFERENCE SHEET 4a

1. TASK: Collect intelligence information.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5.

3. TASK DECOMPOSITION:

a. Identify and submit PIR.

b. Advise on tentative courses of action.

c. Recommend to G2 PIR on enemy capabilities, vulnerabilities, and characteristics of area of operations having major effect on accomplishment of the mission.

d. Critical combat information and confirmed intelligence is obtained from all sources in sufficient detail to provide an accurate assessment (70 percent or better) of the enemy situation and answer at least 80 percent of the commander's critical intelligence needs prior to decisive combat.[4]

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4 Ibid.

G2 TASK REFERENCE SHEET 4b

1. TASK: Analyze/evaluate enemy capabilities.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5.

3. TASK DECOMPOSITION:

a. Recommend to G2 PIR on enemy capabilities, vulnerabilities, and characteristics of area of operations having major effect on accomplishment of the mission.

b. Coordinate with other staff members and assist G2 in analyzing and evaluating possible enemy capabilities and options in his area of interest. The command group analyzes and evaluates each possible capability in sufficient detail to present a prioritized assessment of options open to the enemy.

c. This task is successfully accomplished if the evaluation is accurate and timely enough to allow the commander to react to any enemy capability or to evaluate the risk to be accepted.

G2 TASK REFERENCE SHEET 4c

1. TASK: Determine enemy courses of action, combat effectiveness, and vulnerabilities.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5, FC 71-100.

3. TASK DECOMPOSITION:

a. Coordinate with other staff members and assist G2 in determining most probable enemy course of action.

b. OFFENSE: An accurate analysis will identify strongest and weakest areas of enemy defense along the FLOT, enemy ground and air reinforcement capability (to within two hours from start of enemy movement to critical locations); enemy counterattack capability, and locations and strengths of enemy secondary and alternate defensive positions. This analysis must be accurate and timely enough to allow the commander to contrast combat effectiveness of enemy versus friendly forces, to exploit enemy vulnerabilities, and to select friendly courses of action which will produce desired combat ratios at critical times and locations and accomplish the attack mission with minimal friendly losses.

c. DEFENSE: An accurate analysis will identify probable main and secondary enemy objectives, probable enemy avenues of approach, probable areas of enemy breakthrough attempts, deception attempts (e.g., diversionary attacks), and probable use of enemy tactical air support and enemy follow-on echelons. This analysis must be accurate and timely enough to allow the commander to contrast combat effectiveness of enemy versus friendly forces, to exploit enemy vulnerabilities, to shift/concentrate combat power to achieve desired combat ratios at critical times and locations, and to slow or halt the enemy attack without accepting irreparable loss of friendly combat effectiveness.

G3 TASK REFERENCE SHEET #1

1. TASK: Disseminate intelligence, intelligence estimates, and combat information.

2. SUPPORTING DOCUMENTS: N/A.

3. TASK DECOMPOSITION: This task is not described in FM 101 5 or ARTEP 100-2 but may be decomposed from other appropriate manuals. However, the task name was deemed adequate for the purpose of assessing analytic aiding opportunities for the G3.

1. FUNCTION: React to enemy NBC operations.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5

3. FUNCTION DECOMPOSITION:

   a. React to nuclear attack.

   b. React to chemical or biological attack.

   c. Conduct NBC defensive operations.

1. TASK: React to nuclear attack.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5, FM 21-40, FC 71-100, FC 100-34, ARTEP 3-387.

3. TASK DECOMPOSITION:

a. Receive reports on NBC affected units/areas and submit NBC-1 report to higher headquarters.

b. Verify the initial use of NBC weapons by the enemy.

c. Implement individual and unit nuclear protective measures and apply MOPP.

d. Determine the effect of enemy use of nuclear weapons on operational plans. Update the operations appraisal accordingly. Advise commander on the operational impact of NBC contamination on tactical, logistic, and civil/military operations.

e. Modify the tactical plan based on the operational situation. Recommend revised task organization or alternate courses of action including minimum confusion and disruption, while reorienting combat power to accomplish the mission.

f. Personnel in affected areas take cover immediately. Command group collects burst data and reports/disseminates in accordance with SOP; directs continuous monitoring; reports data; arranges evacuation of casualties; directs damage assessment and emergency decontamination. Continuous performance of the mission occurs under radiological hazard conditions.

g. Implement the policies and procedures which govern the emergency action system with empnasis on security, training, document control, and the two-man rule.

h. Maintain discipline, law, and order. Establish straggler control points.

i. Use the emergency actions procedures (EAP) system and associated subsystems.

j. Employ control measures that facilitate control coordination in spite of interruptions of electronic communications.

k. Evaluate vulnerability of combat and combat support troop units, installations, and activities to the predicted fallout. Determine the effect of a unit's radiation-exposure status on mission assignments

l. Maintain and report cumulative radiation dose status.

m. Task appropriate agencies for post-strike analysis.

n. Prepare nuclear situation reports.

o. Prepare a collateral damage overlay and a preclusion overlay.

p. React to mass casualties requiring replacements.

q. Prepare command and staff estimates.

r. Prepare requests for nuclear weapon selective release.

s. Authenticate nuclear control orders and process emergency action messages.

t. Identify pertinent target analysis information.

u. Perform target analysis on mobile battlefield targets using the rapid-target analysis techniques.

v. Evaluate available systems versus the tactical situation and recommend the delivery system and weapon to be employed. Recommend employment of atomic demolitions.

w. Select nuclear aimpoints within constraints and damage/limiting factors.

x. Redistribute PNL, ANS, and PNS based on tactical situation. Plan for aerial resupply of nuclear weapons and the use of helicopters for aerial radiation surveys and damage assessments.

y. Task delivery units to fire released nuclear weapons.

1. TASK: React to chemical or biological attack.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5, FM 21-40, FC 71-100, FC 100-34, ARTEP 3-387.

3. TASK DECOMPOSITION:

a. Receive reports on NBC affected units/areas and submit NBC-1 report to higher headquarters.

b. Verify the initial use of NBC weapons by the enemy.

c. Implement individual and unit chemical protective measures and apply MOPP.

d. Assess the effect of enemy chemical strike and update the operations appraisal accordingly. Advise commander on the operational impact of NBC contamination on tactical, logistic, and civil/military operations.

e. Modify the tactical plan based on the operational situation. Recommend revised task organization or alternate courses of action including minimum confusion and disruption, while reorienting combat power to accomplish the mission.

f. Personnel in affected areas wear protective equipment until unit NBC teams determine it is safe to unmask. Command group receives/verifies report; disseminates warning; directs the implementation of defensive measures in accordance with SOP; directs continuous monitoring and decontamination and marking of contaminated area; submits appropriate reports. Continuous performance of the mission occurs under chemical/biological contamination conditions.

g. Implement the policies and procedures which govern the emergency action system with empnasis on security, training, document control, and the two-man rule.

h. Maintain discipline, law, and order. Establish straggler control points.

i. Use the EAP system and associated subsystems.

j. Employ control measures that facilitate control coordination in spite of interruptions of electronic communications.

k. Evaluate vulnerability of combat and combat support troop units, installations, and activities to the predicted fallout.

l. Task appropriate agencies for post-strike analysis.

m. Prepare chemical situation reports.

n. Prepare a collateral damage overlay and a preclusion overlay.

o. React to mass casualties requiring replacements.

p. Prepare command and staff estimates.

q. Prepare requests for chemical weapon release.

r. Authenticate chemical control orders and process emergency action messages.

s. Identify pertinent target analysis information.

t. Perform target analysis on mobile battlefield targets using the rapid-target analysis technique.

u. Evaluate available systems versus the tactical situation and recommend the delivery system and weapon to be employed.

v. Plan for aerial resupply of chemical weapons and the use of helicopters for aerial damage assessments.

1. TASK: Conduct NBC defensive operations.

2. SUPPORTING DOCUMENTS: FM 101-5, FM 21-40, FC 71-100, FC 100-34, ARTEP 3-387.

3. TASK DECOMPOSITION:

a. Prepare, authenticate, and publish the overall command SOP with contributions from other staff sections.

b. Provide centralized direction and coordination of NBC defense measures before, during, and after attack, with delegated responsibility for controlling these measures and for taking appropriate measures after the attack.

c. Provide for preplanning and training in NBC defense measures.

d. Identify items to be included in the commander's nuclear and chemical guidance.

e. Provide for warning and reporting of NBC hazards or attacks.

f. Identify, apply, and/or recommend collateral damage and troop safety constraints.

g. Provide for effective defense communications.

h. Plan for chemical detection and radiological monitoring and survey.

i. Maintain and report cumulative dose status.

j. Plan for handling and first aid treatment of casualties in an NBC environment. Plan for mass casualties; react to mass casualties requiring replacements.

k. Plan for decontamination of personnel, equipment, vehicles, and vital terrain, as appropriate.

l. Exercise staff supervision over OPSEC activities, including determining essential elements of friendly information and OPSEC vulnerabilities, including nuclear vulnerability assessment analysis and, in coordination with the chemical officer, maintaining the radiation exposure status of the command; recommending troop safety criteria and operation exposure guide; and recommending the appropriate MOPP for the command.

m. Maintain discipline, law, and order. Establish straggler control points.

n. Supervise the preparation of damage control plans.

o. Be responsible for ensuring nuclear/chemical vulnerability analyses are conducted.

p. Determine techniques for overcoming the vulnerabilities of communications systems.

q. Employ control measures that facilitate control and coordination in spite of interruptions of electronic communications.

r. Disseminate the NUCWARN message and the NBC-3 chemical message.

s. Determine operations security (OPSEC) requirements and procedures which minimize indications of nuclear and chemical request, release, and employment intentions.

t. Develop and maintain a personnel reliability program (PRP).

u. Use the EAP system and associated subsystems, with empnasis on security, training, document control, and the two-man rule.

v. Prepare nuclear/chemical situation reports.

w. Authenticate nuclear and chemical control orders and process emergency action messages.

x. Task appropriate agencies for post-strike analysis.

y. Modify the tactical plan based on the operational situation. Prepare recommendation for revised task organization or alternate course of action, if required.

z. Ensure that headquarters, major subordinate units, and nuclear delivery units have the proper authenticators for the control and release of nuclear weapons.

aa. Implement individual and unit nuclear and chemical protective measures and apply MOPP.

bb. Develop a replacement system plan which optimizes individual, crew, platoon, and unit replacements.

cc. Prepare command and staff estimates.

dd. Prepare a collateral-damage overlay and a preclusion overlay.

ee. Recommend general location of command post.

ff. Prepare a nuclear accident and incident control plan (NAICP).

gg. Determine the effect of enemy use of nuclear weapons on operational plans.

nn. Assist in planning the use of nuclear and chemical weapons, to include integration of chemical weapons in denial operations and obstacles.

G3 FUNCTION REFERENCE SHEET 5

1. FUNCTION: Secure and protect the corps/division.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5.

3. FUNCTION DECOMPOSITION:

   a. Develop and implement OPSEC programs.

   b. Conduct offensive counterintelligence operations.

   c. React to enemy EW.

   d. Conduct RACO.

   e. React to enemy air attack.

G2 TASK REFERENCE SHEET 08

1. TASK: Develop and implement OPSEC programs.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5, FC 71-100.

3. TASK DECOMPOSITION:

a. Exercise staff supervision over OPSEC activities; supervise and coordinate the activities of the OPSEC staff elements. The purpose of OPSEC is to protect military operations and activities by denying indicators of friendly plans and intentions to enemy intelligence. Operations staffs direct OPSEC and recommend OPSEC measures. OPSEC encompasses countersurveillance, countermeasures, and deception.

b. Supervise and coordinate analysis of the OPSEC posture of the command with the G2, the C-E officer, and other staff officers.

c. Determine sensitive aspects of the operation.

d. Determine essential elements of friendly information and OPSEC vulnerabilities, including nuclear vulnerability assessment analysis. In coordination with the chemical officer, maintain the radiation exposure status of the command; recommend troop safety criteria and operation exposure guide; and recommend the appropriate MOPP for the command.

e. Coordinate evaluation of enemy intelligence threat with the G2. Analyze the risk associated with the mission.

f. Determine countermeasure requirements.

g. Ensure that all plans consider the overall security of the command.

h. Plan, implement, and evaluate countersurveillance operations and countermeasures.

i. Coordinate with the provost marshal (PM) and G2 the implementation of physical security and information security measures.

j. Coordinate with the C-E officer the implementation of SIGSEC measures.

k. Supervise and coordinate the conduct of OPSEC surveys with the G2 to evaluate the effectiveness of countersurveillance and countermeasures.

l. Supervise deception activities, including determining requirements and/or opportunities for deception operations in coordination with the G2 and recommending the deception objective.

m. Recommend the deception story in coordination with the G2. Prepare the tactical cover and deception (C&D) estimate, recommend the C&D story, and prepare the C&D plan.

n. Determine and coordinate deception measures.

o. Prepare the deception annex to plans and orders.

p. Prepare the OPSEC estimate.

q. Prepare the OPSEC annex to plans and orders.

r. Provide continuous, current staff appraisal.

G2 TASK REFERENCE SHEET 6b

1. TASK: Conduct offensive counterintelligence operations.

2. SUPPORTING DOCUMENT: FM 101-5.

3. TASK DECOMPOSITION:

a. Coordinate evaluation of enemy intelligence threat with the G2.

b. Plan, implement, and evaluate countersurveillance operations and countermeasures.

c. Ensure support of operations; determine effect on operations to minimize interference.

d. Designate forces, area, equipment, and operations (including training) requiring priority measures.

e. Receive from G2 advice and recommendations concerning the counterintelligence aspects of deception.

f. Receive from G2 advice and recommendations concerning electronic warfare (EW) and operations security (OPSEC) estimates and annexes to plans and orders.

g. Provide for counterreconnaissance and cover and concealment.

h. Provide continuous, current staff appraisal.

G3 TASK REFERENCE SHEET 00

1. TASK: React to enemy EW.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5.

3. TASK DECOMPOSITION:

a. Exercise staff supervision over EW activities.

b. Plan and supervise, in coordination with the G2, all EW activities in support of tactical operations.

c. Prepare and coordinate the EW annex to plans and orders.

d. Determine requirements to support all EW activities.

e. Supervise and coordinate with the G2 and the C-E officer the evaluation of MIJI reports. Coordinate all EW jamming efforts.

f. Exercise coordinating staff supervision over the EW section. Assign missions to EW elements.

g. Establish priority targets for ECM and publish control measures.

h. Provide continuous, current staff appraisal.

i. This task is successfully accomplished if division communications-electronics continue to function without a decrease in the SIGSEC posture of the command. Success in reacting to enemy EW is directly determined by the command's SIGSEC program, ECCM training, and efficient utilization of alternate means of communications.

G3 TASK REFERENCE SHEET 64

1. TASK: Conduct RACO.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5, FC 71-100.

3. TASK DECOMPOSITION:

a. Exercise staff supervision over RAP through the integration of RACC and ADC.

b. Obtain input from all staff sections concerning the impact of RACO and ADC activities upon their staff responsibilities.

c. Plan and coordinate RACO and ADC activities with the G2, G4, PM, assistant division engineer, other staff officers, and host nation forces as appropriate.

d. Ensure that RAP plans of base commanders have been reviewed for their compatibility with the primary mission of the command and their tactical adequacy.

e. Receive input from the G4 and other staff officers concerning ADC plans; ensure that ADC plans of subordinate units have been reviewed to ensure their adequacy and also to ensure their compatibility with command ADC priorities.

f. (At division level) Coordinate through division support command (DISCOM) with the corps RAOC in matters pertaining to RAP. (The DISCOM develops RAP plans, coordinates plans for implementation, and furnishes G3 with RAP plans.)

g. Recommend to the commander tactical areas of responsibility and command for RACO.

h. Organize ADC control and assessment teams as required.

i. Recommend the composition and size of RAP tactical forces.

j. Prepare the RAP annex to plans and orders.

k. (At corps level) Supervise the RAOC.

l. Provide continuous, current staff appraisal.

m. This task is successfully accomplished if enemy attempts to disrupt the division rear area are detected and neutralized or effectively countered prior to serious loss or disruption of unit operations.

G3 TASK REFERENCE SHEET 6e

1. TASK: React to enemy air attack.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5.

3. TASK DECOMPOSITION:

a. Maintain a current operation estimate of the situation in coordination with other staff officers.

b. Exercise staff supervision, through the G3 Air, of the AME.

c. In coordination with the AME, recommend reallocation of forces/task organization or change in mission as appropriate. Assign missions to subordinate elements of the command.

d. Coordinate all aspects of maneuver with support (for example, fires, EW), to include other service components (for example, Air Force, Navy, Marine Corps), both forward and in the rear, and coordination of the use of airspace by all agencies.

e. This task is successfully accomplished if active and passive air defense measures adequately protect the division priorities. Warning of attack is provided to all units and functions within the AD network. Organization and deployment of AD weapons achieve mix and mass to protect assigned priorities of the division commander. Contingency plans for immediate response to enemy air attack are effective.

1. FUNCTION: Provide for CSS.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5.

3. FUNCTION DECOMPOSITION:

   a. Arm the system.

   b. Fuel the system.

   c. Fix the system.

   d. Man the system and support the troops.

G? TASK REFERENCE SHEET 7a

1. TASK: Arm the system.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5, FC 71-100.

3. TASK DECOMPOSITION:

a. Prepare, coordinate, authenticate, and publish operation plans and orders, including tactical movement orders; review plans and orders of subordinate units.

b. Recommend task organization and assign missions to subordinate elements of the command.

c. Provide G4 with current changes to task organization, troop displacement, and tactical plan.

d. Recommend priorities for allocating equipment and supplies having an impact on the training or tactical mission, such as ammunition basic loads; nuclear and chemical ammunition; required supply rate of ammunition; and controlled supply rate of ammunition for subordinate units.

e. Required supply rate (RSR) development is the responsibility of the G3. Early in the planning process, using the best information available, the G3 develops gross requirements. As planning progresses, the G3 directs brigade, division artillery, battalions, companies, and batteries for the development of RSRs. Corps establishes the controlled supply rate (CSR) for those munitions in short supply. After the G4 compares RSR requirements with availability, he identifies shortfalls and coordinates with the G3. A division CSR is then published and is continually reviewed and revised according to changes in ammo availability.

f. Provide G4 with allocation of nuclear and chemical weapons.

g. This task is successfully accomplished if ammunition allocation/ distribution is timely and consistent in accordance with the commander's priorities, guidance, and concept or operations.

G2 TASK REFERENCE SHEET 70

1. TASK: Fuel the system.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5.

3. TASK DECOMPOSITION:

a. Prepare, coordi ate, authenticate, and publish operation plans and orders, including tactical movement orders; review plans and orders of subordinate units.

b. Provide G4 with current changes to task organization, troop displacement, and tactical plan.

c. Recommend task organization and assign missions to subordinate elements of the command.

d. Recommend priorities for allocating equipment and supplies having an impact on the training or tactical mission.

e. Provide G4 with information of anticipated attachments, assignments, or detachments of units for logistic support planning purposes.

f. Provide G4 with training requirements or tactical courses of action to assist in determining logistic support tasks.

g. This task is successfully accomplished if fuel supply and distribution procedure have been prepared which permit the distribution of fuel to command elements in accordance with the commander's priorities, guidance, and concept of operations.

G3 TASK REFERENCE SHEET 7c

1. TASK: Fix the system.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5.

3. TASK DECOMPOSITION:

a. Prepare, coordinate, authenticate, and publish operation plans and orders, including tactical movement orders; review plans and orders of subordinate units.

b. Recommend priorities for allocating critical resources of the command, including time, personnel, supplies, and equipment.

c. Recommend task organization and assign missions to subordinate elements of the command.

d. Determine force development requirements, including manpower utilization and requirements.

e. Coordinate with G4 for inclusion of maintenance training, supply economy, etc., in training program.

f. Provide G4 with current changes to task organization, troop displacement, and tactical plan.

g. May recommend priority of maintenance effort or combat service support units.

h. Inform G4 of any observation noted concerning maintenance within the command.

i. The command group establishes priorities for maintenance which emphasize forward contact teams, battlefield repair, and dynamic use of controlled cannibalization when appropriate. The task is accomplished successfully if weapon systems and support systems essential to mission accomplishment are recovered, repaired, and returned to combat in sufficient numbers and in time to maintain required ratios of combat power.

G3 TASK REFERENCE SHEET 71

1. TASK: Man the system and support the troops.

2. SUPPORTING DOCUMENTS: ARTEP 100-2, FM 101-5.

3. TASK DECOMPOSITION:

a. Prepare, coordinate, authenticate, and publish operation plans and orders, including tactical movement orders; review plans and orders of subordinate units.

b. Recommend priorities for allocating critical resources of the command, including time, personnel, supplies, and equipment.

c. Recommend task organization and assign missions to subordinate elements of the command.

d. Provide G4 with current changes to task organization, troop displacement, and tactical plan.

e. Provide G4 with information of anticipated attachments, assignments, or detachments of units for logistic support planning purposes.

f. Provide G4 with training requirements or tactical courses of action to assist in determining logistic support tasks.

g. Use resources to accomplish both maneuver and support; coordinate all aspects of maneuver with support.

h. Provide tactical troops for security of nuclear weapons, when needed.

i. The command group directs health preservation and medical support activities which provide priority support to committed units; ensures the provision of adequate subsistence to all elements; and prioritizes personnel replacements to support the battle plan. Accomplishment of this task is successful if priorities are adjusted as necessary to sustain the combat effectiveness of the command and achieve required ratios of combat power.

APPENDIX E

G3 PRODUCTS

E-1. INTRODUCTION. The following lists were developed primarily from the Command Information Database (CIDB), with additional input from doctrinal publications and subject-matter experts.

E-2. G3 MAIN FORMAL PRODUCTS.

OPORD *
- Task Organization
- Situation
- Mission
- Execution
- Service Support
- Command and Signal
- Fire Support Annex
- Air Defense Annex
- Engineer Annex
  - Obstacle Appendix
  - Denial Appendix
  - ADM Appendix
- Deception Annex
- Army Aviation Annex
- Rear Area Protection Annex
- Operations Security Annex
- Airspace Management Annex
- Psychological Operations Annex
- Civil Affairs Annex
- CE Annex
- NBC Defense Annex
- Chemical Support Annex
- Service Support Annex
- Task Organization Annex
- Intelligence Annex
- Electronic Warfare Annex
- Road Movement Annex
- Air Movement Annex
- Operations Overlay Annex

Warning Order
Frag Order
Movement Order

* OPLAN is not included separately; difference between OPORD and OPLAN is that OPLAN contains assumptions and specifies the time or conditions under which it will be placed into effect.

Admin/Logistics Order
Aircraft Mission Request (Army Aviation)
Artillery Situation Report
Air Request/Task Message (Pre-planned)
ADM Target Folder
Post Strike Analysis (Nuclear Strike)
Chemical Strike Warning
Nuclear Strike Warning
ECM Daily Summary
Electronic Warfare Support Measures (ESM) Report
Engineer Barrier Report
Engineer Mission Coordination Sheet
Engineer Trace Report
Engineer Situation Report
Engineer Report-Damage
Air Defense Status Report
Aircraft Hostile Fire Report
Air Defense Engagement Report
Commander's Situation Report (SitRep)
Unit Location Update
Command, Control and Communication CM Spt Request
Minefield Report
Engineer Spot Report
Air Request/Task Message (Immediate)
PSYREP
Spot PSYREP
Airspace Management Procedures Request
ECM Mission Request
Intelligence Summary
NBC 1 (Observer's Initial Report)
NBC 2 (Evaluated Data Report)
NBC 3 (Immediate Warn of Expected Contam)
NBC 5 (Rpt of Areas of Actual Contam)
NBC 6 (Detailed Information on Chem/Bio Attack)
NBC Downwind Message
MIJI Report
OPSEC Spot Report
Required Ammunition Supply Rate (RSR) Report
PSYOP Support Request
Movement Code
Training Plans
Maintain/Update TSOP
Nuclear Release Request
Chemical Release Request

E-3. G3 MAIN IMPLIED PRODUCTS.

Mission Analysis
Operations Estimate
Directed Staff Estimates
Briefings
Maintain the Current Situation
Project Unit Status
Project Critical Shortages
Maintain the Staff Journal
Allocate/Prioritze Replacement Personnel, Materiel, and Units
Maintain the Troop List
Exchange of Information

APPENDIX F

TAXONOMY OF AIDING TECHNOLOGIES

F-1. GENERAL. A classification scheme was needed to define available aiding technologies and to decompose available technologies into separable components. The decomposition process assisted the authors to define potential technologies. This process facilitated qualitative assessment of the potential of each aiding technology for such aiding opportunity.

F-2. METHODOLOGY. A literature review was conducted to identify alternative taxonomies and to refine a consistent taxonomy based on literature and the technical experience of the project team during development of a unit movement planning aid. Existing analytic models were also reviewed to improve analyst understanding of current analytic methods.

F-3. TAXONOMY. The review of pertinent literature and existing analytic models resulted in the formulation of three primary classes of aiding technologies. The technology classes were information processing, user interface, and analytic. A brief description of each is provided in the following subsections.

a. Information Processing. Information processing technologies encompass architectural capabilities inherent to automated information processing. Some example technologies in this class include information storage, access, security, distribution, and communications. Specific realizations of these technologies are UNIX, DBASE II, and Electronic Mail.

b. User Interface. User interface technologies include hardware and software developments which enhance the capability of a human operator to interact with an automated information system. Typical examples in this class are help menus, interactive tools such as the mouse and bit tablet, graphic displays, standard format prompts, touch-sensitive screens, and voice input or output.

c. Analytic. Analytic techniques are embedded or adaptable relational models which transform data which resides in the database. The transformation process goal is to yield meaningful information from existing or readily-available data. In many cases, the analytic techniques have existed and been refined in a manual operating environment but speed, quality, and number of processing steps have been expanded in an automated environment. However, as in the case of artificial intelligence (AI), emerging analytic techniques have also been identified for potential aiding of human performance. The analytic technologies were further decomposed to focus analytic aiding opportunities. A brief description of each category is provided below.

(1) Artificial intelligence (AI). AI techniques refer to application which employ inference rules based on expert knowledge. The authors could not assess the preferences of AI to other analytic aiding alternatives due to the relative immaturity of AI. However, the DARPA Strategic Computing Program and other initiatives may clarify the role of AI as a sound analytic technique.

(2) Mathematical models (MM). Math models encompass straightforward computational techniques which utilize basic relationships to obtain information. Examples are:

distance = rate X time

$$\text{sector force ratio} = \frac{\text{value of enemy forces in sector}}{\text{value of friendly forces in sector}}$$

Information processing and user interface technologies (DBASE II, LOTUS 1,2,3) facilitate the use of math models in an automated environment.

(3) Optimization (OT). Optimization techniques employ operations analysis methods to search for a "best" solution. OT generally requires definition of an objective function (optimization criteria) and a statement of constraints. Example OT applications are linear programming, goal programming, and networks. In some cases, OT methods may interact with heuristic, perhaps AI techniques, to yield a "best feasible" solution under operator control.

(4) Simulation (SIM). Simulations are event- or time-sequenced models which may have math models or optimization techniques embedded. Simulations facilitate the investigation of variable relationships over time or some other designated independent variable(s). Example simulations include deterministic or stochastic (probabilistic) war games or queuing models.

(5) Decision analysis (DA). Decision analysis techniques employ game theory, utility/value models, or decision trees to examine alternative strategies. Use of a decision payoff matrix, which seeks a dominant outcome for a given alternative, is a DA method.

F-4. RESULT. The taxonomy developed in this appendix was adequate to assist the authors in the process of targeting aiding technologies to aiding opportunities. The more detailed understanding of aiding technologies facilitated a relative assessment of the potential of competing technologies to support a specific aiding opportunity. In some cases, a mix of aiding technologies may be required to obtain the best solution.

APPENDIX G

MAPPING OF G3 MAIN CRITICAL TASKS TO FORMAL PRODUCTS

G-1. INTRODUCTION. The following mapping shows the G3 Main formal products and supporting G3 Main critical tasks. The list of products also appears in appendix E. The critical tasks are numbered according to the compiled list in the matrix shown in appendix C. Information was obtained from the Command Information Database (CID), doctrine, and subject-matter experts.

G-2. MAPPING OF TASKS TO PRODUCTS.

PRODUCTS	SUPPORTING TASKS
OPORD	1a, 2a, 2b, 3a
Fire Support Annex	1a, 1d, 3a
Air Defense Annex	1a, 1j, 3a, 6e
Engineer Annex	1a, 1i, 3a
Obstacle Appendix	1a, 1i, 3a
Denial Appendix	1a, 1i, 3a
ADM Appendix	1a, 1e, 1i, 3a
Deception Annex	1a, 3a, 3j, 6a
Army Aviation Annex	1a, 1d, 1l, 3a
Rear Area Protection Annex	1a, 3a, 6d
Operations Security Annex	1a, 3a, 6a
Airspace Management Annex	1a, 3a
Psychological Operations Annex	1a, 3a
Civil Affairs Annex	1a, 3a
CE Annex	1a, 1h, 3a
NBC Defense Annex	1a, 3a, 5c
Chemical Support Annex	1a, 1e, 3a
Service Support Annex	1a, 1f, 3a
Task Organization Annex	1a, 1b, 3a
Intelligence Annex	1a, 2a, 2b,2c, 2d, 3a, 4a, 4b, 4c, 4d, 6b
Electronic Warfare Annex	1a, 1g, 3a
Road Movement Annex	1a, 1f, 1i, 1j, 2a, 3a, 3b, 3c, 3d, 3e, 3f, 3j, 4b, 6d, 7b
Air Movement Annex	1a, 1j, 1l, 3a, 3b, 3c, 3d, 3e, 3f, 3h, 3j, 6d, 6e, 7a, 7b, 7c
Operations Overlay Annex	1a, 1b, 1d, 1i, 2d, 3a, 3d, 5a, 5b, 5c, 6d
Warning Order	1a, 3a, 3c, 3f
Frag Order	1a, 3a
Movement Order	1a, 3a
Admin/Logistics Order	1a, 1b, 1f, 3a, 3d, 3e, 5a, 5b, 5c, 6d, 7a, 7b, 7c, 7d
Aircraft Mission Request (Army Aviation)	1d, 1l, 3c
Artillery Situation Report	1d, 3b, 3d, 3e
Air Request/Task Message (Pre-planned)	1d, 1k, 4a

ADM Target Folder	1e, 1i
Post Strike Analysis (Nuclear Strike)	1e, 3b, 3h
Chemical Strike Warning	1e, 5b, 5c
Nuclear Strike Warning	1e, 5c
ECM Daily Summary	1g, 3b, 3e, 3j, 6a
Electronic Warfare Support Measures (ESM) Report	1g, 3b, 3e, 3j, 6a
Engineer Barrier Report	1i, 3b, 3e
Engineer Mission Coordination Sheet	1i, 3b, 3e, 7d
Engineer Trace Report	1i, 2a, 3b, 3e
Engineer Situation Report	1i, 3b, 3e
Engineer Report-Damage	3b, 3e, 7c
Air Defense Status Report	1j, 3b, 3e, 3h, 6e
Aircraft Hostile Fire Report	3b, 3e
Air Defense Engagement Report	3b, 3e, 6e
Commander's Situation Report (SitRep)	3b, 3e
Unit Location Update	3b
Command, Control and Communication CM SPT Request	3c, 3i, 3j, 6a
Minefield Report	3c
Engineer Spot Report	3c
Air Request/Task Message (Immediate)	3c, 4a
PSYREP	3e
Spot PSYREP	3e
Airspace Management Procedures Req.	3h
ECM Mission Request	3i, 3j, 6a
Intelligence Summary	4d
NBC 1 (Observer's Initial Report)	5a
NBC 2 (Evaluated Data Report)	5a
NBC 3 (Immediate Warn of Expected Contam)	5a
NBC 5 (Rpt of Areas of Actual Contam)	5a
NBC 6 (Detailed Information on Chem/Bio Attack)	5a
NBC Downwind Message	5b, 5c
MIJI Report	6a
OPSEC Spot Report	6a
Required Ammunition Supply Rate (RSR) Report	7a
PSYOP Support Request	7d
Movement Code	7d
Training Plans	1a, 1c, 3a, 3d
Maintain/Update TSOP	3d
Nuclear Release Request	3k
Chemical Release Request	3k

APPENDIX H

A MATRIX OF PRODUCTS, AIDING OPPORTUNITIES, AND AID DESCRIPTORS

H-1. GENERAL. This appendix provides a complete listing of the qualitative assessments obtained by analysis of products, supporting tasks, and aiding technologies. Table H-1 on the following pages captures the targeting of aiding technologies to aiding opportunities which led to the description of potential analytic aids.

H-2. TABLE EXPLANATION. A legend is provided to clarify the abbreviations and codes contained in the table. The table was contructed by first listing each G3 Main product in column 1, G3 products. Column 2 reflects the results of an analysis of each product and supporting tasks to determine (negative or affirmative) whether an analytic aid might be useful. Column 3 reflects an assessment concerning the appropriateness of information processing technologies. Column 4 reflects an assessment concerning the appropriateness of user interface technologies. Columns 5-9 reflect an assessment concerning the appropriateness of alternative analytic aiding technologies. Column 10 reflects a brief aid descriptor for each identified analytic aiding opportunity.

H-3. RESULTS. Table H-1 provides a ready reference of all assessments and was the basis for the listing of 53 analytic aiding opportunities compiled in appendix I. Each analytic aiding opportunity corresponds to a specific aid descriptor and product in table H-1.

Table H-1. A matrix of products, aiding opportunities and aid descriptors (continued on following pages)

LEGEND:

INFO - Information
AI - Artificial intelligence
MM - Mathematical model
OT - Optimization technique
SIM - Simulation
DA - Decision analysis

Y - Yes
N - No
? - Requires more information
✓ - Definitely requires aiding technology

H - High probability of problem solution
M - Medium probability of problem solution
L - Low probability of problem solution

G3 PRODUCTS	ANALYTIC AID ASSESSMENT	AIDING TAXONOMY: INFO PROCESSING	AIDING TAXONOMY: USER INTERFACE	ANALYTIC AID TECHNIQUES: AI	MM	OT	SIM	DA	AID DESCRIPTOR
OPORD Task Organization	Y	✓	✓	?	L			M	Task Organization
Situation	Y			SEE OPERATIONS ESTIMATE					
Mission	N								
Execution	Y	✓	✓		M	L	L		Terrain Management
					H		M		Force Movement Analyzer
Service Support	Y	✓		?	H		L		Basic Load
					H				CSR
				?			M	M	Replacement Priorities
					H				Fuel Consumption Rates
Command & Signal	N	✓	✓						

Table H-1. (continued)

G3 PRODUCTS	ANALYTIC AID ASSESSMENT	AIDING TAXONOMY: INFO PROCESSING	AIDING TAXONOMY: USER INTERFACE	ANALYTIC AID TECHNIQUES: AI	MM	OT	SIM	DA	AID DESCRIPTOR
Fire Support Annex	Y	✓	✓	?		L	M	M	Priorities of Fire
				?	L			M	ORG for Combat
				?	M			M	PCL
				?	M			M	PNL
					H	M	L	M	Expenditure Rates
Air Defense Annex	Y	✓	✓	?	L	M	M	M	Priorities/Allocation
Engineer Annex:		✓	✓						
Obstacle App	Y			?	M	M	L	L	Obstacle Preparation
Denial App	Y	✓	✓	?	M	M	L	L	Denial Preparation
ADM App	Y	✓	✓	?	M	M	L	L	Optimal ADM Employment
Deception Annex	N								
Army Avn Annex	Y	✓		?	M		L		Aircraft Requirements
Rear Area Protection Annex	Y	✓	✓		L		L	L	RAP Capabilities
Operations Security Annex	N								
Airspace Management Annex	Y	✓	✓	?			M	M	Control Procedures/Status
Psychological Operations Annex	Y	✓			L			M	Operational Effectiveness
				?	L	L	L	M	Assign PSYOP Assets
Civil Affairs Annex	N	✓	✓						
CE Annex	N	✓	✓						
NBC Defense Annex	Y	✓	✓		H				Troop Exposure
				?			M	M	Target Susceptibility
				?			M	M	Pre-Position Decon Supplies

Table H-1. (continued)

G3 PRODUCTS	ANALYTIC AID ASSESSMENT	AIDING TAXONOMY: INFO PROCESSING	AIDING TAXONOMY: USER INTERFACE	ANALYTIC AID TECHNIQUES: AI	MM	OT	SIM	DA	AID DESCRIPTOR
				?		L	M	L	
Chemical Spt Annex	Y	✓	✓	SEE NBC DEFENSE ANNEX					Target Allocation
Service Spt Annex	Y	✓	✓	?	M	M	M	M	Allocate Replacement Equipment, Supplies, Troops
Task Organization Annex	Y	SEE TASK ORGANIZATION UNDER OPORD							
Intelligence Annex	N	✓	✓						
Electronic Warfare Annex	Y	✓	✓	?		L	M	L	Optimal Friendly Employ
Road Movement Annex	Y	SEE MOVEMENT ORDER							
Air Movement Annex	Y	SEE MOVEMENT ORDER							
Operations Overlay Annex	N	✓	✓						
Warning Order	Y				M			M	Time Analyzer
Frag Order	Y	SAME AS REQUIREMENTS AS IN OPORD AND ANNEXES							
Movement Order	Y	✓	✓	?	M	L	M		Unit Movement Planner
				?	M		M		Air Movement Analyzer
					H	M			Air Movement Table (Army Aviation & AF)
Admin/Logistics Order	Y	SEE OPORD - SERVICE SUPPORT							
Aircraft Mission Request (Army) Aviation	Y	✓	✓	?		L	M		Route Evaluation
					H		M		Acft Asset Analysis

Table H-1. (continued)

G3 PRODUCTS	ANALYTIC AID ASSESSMENT	AIDING TAXONOMY							AID DESCRIPTOR
		INFO PROCESSING	USER INTERFACE	ANALYTIC AID TECHNIQUES					
				AI	NM	OT	SIM	DA	
Artillery Situation	Y	✓			H				Forecast Tube Replacement
Air Request/Task Message(Pre-Planned)	Y	✓	✓	?			L	M	Integrate w/F.S. Plan
AUM Target Folder	N	✓	✓						
Post Strike Analysis (Nuclear	Y	✓			H				Fallout Prediction
					H		M		Damage Analysis (Effects on Enemy)
Chemical Strike Warn	Y	✓			H				Chem Effects Prediction
Nuclear Strike Warn	Y	✓			H				Nuc Effects Prediction
ECM Daily Summary	N	✓	✓						
Electronic Warfare Support Measures (ECM) Report	N	✓							
Engineer Barrier Rpt	Y	✓	✓	?	M	L	M	L	Obstacle Emplacement
Engineer Mission Coordination Sheet	Y	✓	✓	?	M		M	M	Allocate Resources
Engineer Trace Rpt	N	✓	✓						
Engineer Situation Report	N	✓	✓						
Engineer Rpt (Damage)	Y	✓	✓				L	M	Evaluate Damage Repair Alternative

Table H-1. (continued)

G3 PRODUCTS	ANALYTIC AID ASSESSMENT	AIDING TAXONOMY							AID DESCRIPTOR
		INFO PROCESSING	USER INTERFACE	ANALYTIC AID TECHNIQUES					
				AI	MM	OT	SIM	DA	
Air Def Status Rpt	N	✓	✓						
Acft Hostile Fire Rpt	N	✓							
Air Defense Engagement Report	N	✓							
Commander's Situation Rpt (SITREP)	Y	SEE PROJECT UNIT STATUS							
Unit Location Update	N	✓	✓						
Command, Control and Communication CM Spt Request	N	✓	✓						
Minefield Report	N	✓	✓						
Engineer Spot Report	Y	✓			H	M			Combat Effectiveness
Air Request/Task Message (Immediate)	Y	✓	✓	?			M	M	Allocate CAS & RFECE
PSYREP	N	✓							
Spot PSYREP	N	✓							
Airspace Management Procedures Request	N								
ECM Mission Request	Y	✓	✓	?	M		M		Allocate Critical Assets
Intelligence Summary	N								
NBC 1 (Observer's Initial Report)	N								

Table H-1. (continued)

G3 PRODUCTS	ANALYTIC AID ASSESSMENT	AIDING TAXONOMY							AID DESCRIPTOR
		INFO PROCESSING	USER INTERFACE	ANALYTIC AID TECHNIQUES					
				AI	MM	OT	SIM	DA	
NBC 2 (Evaluated Data Report	Y	✓	✓		M		L		NBC Effects Evaluation
NBC 3 (Immediate Warning of Expected Contamination)	Y	✓	✓		H		M		Predict Contamination (IDs Affected Unit)
NBC 5 (Report of Areas of Actual Contamination)	Y	✓	✓	?	H				Hazard Areas
NBC 6 (Detailed Information on Chem/ Bio Attack)	N	✓							
NBC Downwind Message	N	✓							
MIJI Report	N	✓							
OPSEC Spot Report	N	✓							
Required Ammunition Supply Rate Report	Y	✓			H		L		Forecast Usage Rates
PSYOP Support Request	N	✓	✓						
Movement Code	Y	SEE MOVEMENT ORDER							
Training Plans	?								
Maintain/Update TSOP	N	✓							
Nuclear Release Req	N								
Chemical Release Req	N								

AD-A167 216 G3 ANALYSIS VOLUME 2 APPENDIXES(U) COMBINED ARMS 2/3
OPERATIONS RESEARCH ACTIVITY FORT LEAVENWORTH KS
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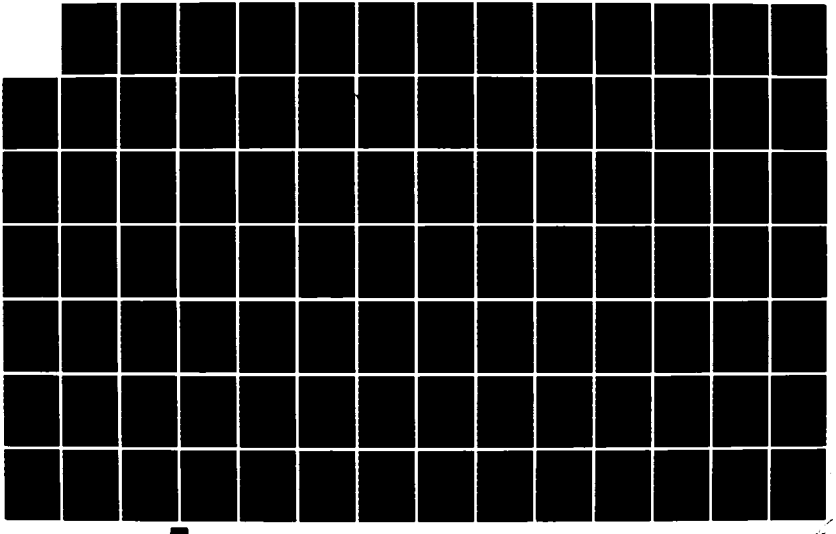

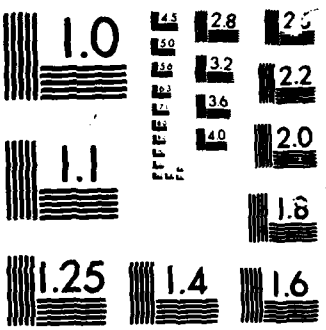

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Table H-1. (concluded)

G3 PRODUCTS	ANALYTIC AID ASSESSMENT	AIDING TAXONOMY: INFO PROCESSING	AIDING TAXONOMY: USER INTERFACE	AIDING TAXONOMY: ANALYTIC AID TECHNIQUES AI	MM	OT	SIM	DA	AID DESCRIPTOR
Mission Analysis	N	✓	✓						
Operations Estimate	Y	✓	✓		H				Relative Combat Power
				?	L		M	M	Compare Courses of Action
				OPORD AND ANNEXES AIDS SUPPORT THIS PRODUCT					
Directed Staff Estimates	?								
Briefings	?								
Maintain the Current Situation	?								
Project Unit Status	Y	✓	✓		H				Forecast Unit Status
Project Critical Shortages	Y	SEE PROJECT UNIT STATUS							
Maintain Staff Journal	N	✓							
Allocate/Prioritize Personnel, Materiel and Units	Y	✓	✓	?	M	L	M	M	Assign Critical Replacement Units, Personnel and Materiel
Maintain the Troop List	N	✓							
Exchange Information	N	✓	✓						

APPENDIX I

ANALYTIC AIDING OPPORTUNITIES

I-1. GENERAL. This appendix is organized into annexes which consist of worksheets and lists which were used to consolidate the analytic aiding opportunities (annex I), compile Commander's Critical Information Requirements (CCIR) Mappings (annex III), assess aid benefits and costs (annex IV), and consolidate prioritization results (annex V). A list of the CCIR appears in annex II.

I-2. PRIORITIZATION. A consistent methodology was employed to develop a recommended priority for research design, development, evaluation, and fielding of analytic aids. An initial basis for primary criteria for prioritization was decomposition of priority based on benefit (importance) and cost (feasibility). Importance encompasses the factors which contribute to improved G3 effectiveness. Feasibility encompasses considerations of major costs associated with developing training uses, fielding, and maintaining applications. The two primary criteria were further decomposed into three subcriteria for each. A discussion of each subcriterion is provided in the following subparagraphs.

a. Importance.

(1) Frequency. This subcriterion of importance was used to assess the frequency of potential use of a specific aid in a 24-hour period during mid- to high-intensity combat operations. The premise was that aids which are used repeatedly have higher utility than those which are used infrequently.

(2) Time and quality savings. This subcriterion of importance was used to assess the potential for more rapid product development and improved product quality for a single iteration. Factors considered in the assessment were task/product complexity, number of variables considered, product content/volume, and training or competence required for effective task performance. The underlying premise was that aids which reduce time and improve quality during a single product iteration have higher utility than those aids which save little time or quality.

(3) CCIR. Each aid was rated on a ratio scale based on the number of major subcategories of CCIR which is supported. The underlying premise was that aid utility increases with increasing production/support of CCIR.

b. Feasibility.

(1) Operational. Each aid was considered in terms of costs associated with the operational environment. Factors considered were aid transparency and user literacy. The underlying premise was that transparent aids which minimize requirements for training (user literacy) have the highest utility.

(2) Economical. Each aid was considered in terms of costs required for research to refine requirements, prototype development, maintenance and training, hardware availability, and fielding/conversion of systems. The underlying premise was that a near complete, straightforward, easily supported prototype has the highest utility.

(3) Technical. Each aid was considered in terms of the existence of near-term or current technologies for aid development and fielding. This was basically a risk assessment. Factors considered included communications, automation, software development technologies, data availability, and maturity of analytic techniques. The underlying premise was that applications which are dependent on existing, well-established technologies are minimal risk candidates.

I-3. PRIORITIZATION WORKSHEETS. The prioritization worksheets at annex IV of this appendix were developed by the analysts using consensus to assess each aid for each of the six subcriteria.

I-4. PRIORITIZATION RESULTS. The subcriteria scores obtained from the prioritization worksheets were transformed based on weights obtained from interactive use of "Expert Choice." The details of the prioritized weightings, prioritization results, and sensitivity analysis are contained in annex V of this appendix.

ANNEX I TO APPENDIX I

LIST OF G3 MAIN ANALYTIC AIDING OPPORTUNITIES

Following is a list of 53 G3 Main analytic aiding opportunities identified as a result of the assessment process shown in appendix H. The list shows the aid number and descriptor (for example, 3-1 is the first G3 aiding opportunity), followed by product supported, aid description, and potential analytic technique(s) to be employed. The list is in no particular order.

3-1. AID DESCRIPTOR: Allocate Critical Assets (ECM)
a. Product supported: ECM Mission Request
b. Description: This aid is designed to determine the optimal way to allocate limited ECM assets.
c. Analytic techniques: Simulation (SIM), math model (MM), artificial intelligence (AI)

3-2. AID DESCRIPTOR: Aircraft Asset Analyzer
a. Product supported: Aircraft Mission Request (Army Aviation)
b. Description: This aid is designed to analyze whether sufficient aviation assets exist based on mission, time frame, and priority.
c. Analytic techniques: MM, SIM

3-3. AID DESCRIPTOR: Aircraft Requirements
a. Product supported: Army Aviation Annex
b. Description: This aid is designed to determine number of aircraft required to support the mission.
c. Analytic techniques: MM, AI, SIM

3-4. AID DESCRIPTOR: Air Movement Analyzer
a. Product supported: Movement Order
b. Description: This aid is designed to analyze whether there are sufficient time and assets to accomplish the stated mission.
c. Analytic techniques: MM, SIM, AI

3-5. AID DESCRIPTOR: Air Movement Planner
a. Product supported: Movement Order
b. Description: This aid is designed to automate the "stubby pencil" calculations of an air movement table.
c. Analytic techniques: MM, optimization technique (OT)

3-6. AID DESCRIPTOR: Allocate Replacement Equipment, Supplies, and Troops
a. Product supported: Service Support Annex
b. Description: This aid is designed to determine the best use of replacement equipment, supplies, and troops.
c. Analytic techniques: Decision analysis (DA), MM, SIM, OT, AI

3-7. AID DESCRIPTOR: Allocate Resources
a. Product supported: Engineer Mission Coordination Sheet
b. Description: This aid is designed to allocate critical resources within the Engineer functional area.
c. Analytic techniques: MM, SIM, DA, AI

3-8. AID DESCRIPTOR: Assign Critical Replacement Units, Personnel, and Materiel

a. Product supported: Allocate/Prioritize Replacement Personnel, Materiel, and Units

b. Description: This aid is designed to make allocations based on need and is similar to aid 3-6, above.

c. Analytic techniques: DA, MM, SIM, OT, AI

3-9. AID DESCRIPTOR: Assign PSYOP Assets

a. Product supported: Psychological Operations Annex

b. Description: This aid is designed to optimally assign psychological elements and equipment.

c. Analytic techniques: DA, AI, MM, OT, SIM

3-10. AID DESCRIPTOR: Basic Load Allocations

a. Product supported: OPORD (Service Support)

b. Description: This aid is designed to determine basic load based on ammunition availability, intensity of conflict, and resupply.

c. Analytic techniques: MM, AI, SIM

3-11. AID DESCRIPTOR: Allocate Combat Air Support (CAS) and Reconnaissance (RECCE) Aircraft

a. Product supported: Air Request/Task Message

b. Description: This aid is designed to determine best utilization of CAS and RECCE aircraft.

c. Analytic techniques: DA, SIM, AI

3-12. AID DESCRIPTOR: Combat Effectiveness (Obstacles)

a. Product supported: Engineer Spot Report

b. Description: This aid is designed to evaluate the effectiveness of barriers and obstacles.

c. Analytic techniques: MM, OT

3-13. AID DESCRIPTOR: Compare Alternate Courses of Action

a. Product supported: Operations Estimate

b. Description: This aid is designed to analyze alternatives.

c. Analytic techniques: DA, AI, MM, OT, SIM

3-14. AID DESCRIPTOR: Control Procedures/Status

a. Product supported: Airspace Management Annex

b. Description: This aid is designed to analyze various control methods.

c. Analytic techniques: DA, SIM, AI

3-15. AID DESCRIPTOR: Controlled Supply Rate (CSR)

a. Product supported: OPORD (Service Support)

b. Description: This aid is designed to analyze ammunition expenditure rates and, where required, recommend control rate restrictions.

c. Analytic techniques: MM

3-16. AID DESCRIPTOR: Damage Analysis (Effects on Enemy)
a. Product supported: Post-Strike Analysis (Nuclear)
b. Description: This aid is designed to analyze/predict damage to the enemy as a result of nuclear engagement.
c. Analytic techniques: MM, SIM

3-17. AID DESCRIPTOR: Evaluate Damage Repair Alternatives
a. Product supported: Engineer Report (Damage)
b. Description: This aid is designed to evaluate the impact of the damage and the various options of repair.
c. Analytic techniques: DA, SIM

3-18. AID DESCRIPTOR: Pre-Position Decon Supplies
a. Product supported: NBC Defense Annex
b. Description: This aid is designed to ascertain the best location and quantities for pre-positioning.
c. Analytic techniques: DA, SIM, AI

3-19. AID DESCRIPTOR: Denial Preparation
a. Product supported: Engineer Annex-Denial Appendix
b. Description: This aid is designed to prioritize the placement of appropriate obstacles.
c. Analytic techniques: OT, MM, SIM, AI, DA

3-20. AID DESCRIPTOR: Chemical Effects Prediction
a. Product supported: Chemical Strike Warning
b. Description: This aid is designed to determine potential effects and recommended actions to minimize those effects.
c. Analytic techniques: MM

3-21. AID DESCRIPTOR: Nuclear Effects Prediction
a. Product supported: Nuclear Strike Warning
b. Description: This aid is designed to determine potential effects and recommend action to minimize those effects.
c. Analytic techniques: MM

3-22. AID DESCRIPTOR: Expenditure Rates
a. Product supported: Fire Support Annex
b. Description: This aid is designed to determine expenditure rates and, when necessary, CSR based on mission and unit.
c. Analytic techniques: MM, OT, DA, SIM

3-23. AID DESCRIPTOR: Fallout Prediction
a. Product supported: Post-Strike Analysis (Nuclear)
b. Description: This aid is designed to predict fallout as a result of a nuclear strike.
c. Analytic techniques: MM

3-24. AID DESCRIPTOR: Force Movement Analyzer
a. Product supported: OPORD (Execution)
b. Description: This aid is designed to investigate force movement alternatives and time required for force movement.
c. Analytic techniques: MM, SIM

3-25. AID DESCRIPTOR: Forecast Tube Replacement
a. Product supported: Artillery Situation Report
b. Description: This aid is designed to forecast artillery tube replacement requirements based on current status and future mission.
c. Analytic techniques: MM

3-26. AID DESCRIPTOR: Fuel Consumption Rates
a. Product supported: OPORD (Service Support)
b. Description: This aid is designed to determine fuel requirements based on type venicles, mission, terrain, weather, etc.
c. Analytic techniques: MM

3-27. AID DESCRIPTOR: Hazard Areas
a. Product supported: NBC 5 (Report of Areas of Actual Contamination)
b. Description: This aid is designed to determine actual contamination areas.
c. Analytic techniques: MM, AI

3-28. AID DESCRIPTOR: Integrate CAS with Fire Support Plan
a. Product supported: Air Request/Task Message (Pre-Planned)
b. Description: This aid is designed to integrate close air support with the overall fire support plan.
c. Analytic techniques: DA, AI, SIM

3-29. AID DESCRIPTOR: NBC Effects Evaluation
a. Product supported: NBC 2 (Evaluated Data Report)
b. Description: This aid is designed to evaluate NBC strike data.
c. Analytic techniques: MM, SIM

3-30. AID DESCRIPTOR: Obstacle Emplacement Plan
a. Product supported: Engineer Barrier Report
b. Description: This aid is designed to optimally select types and locations of obstacles.
c. Analytic techniques: OT, MM, SIM, DA, AI

3-31. AID DESCRIPTOR: Obstacle Preparation
a. Product supported: Engineer Annex - Obstacle Appendix
b. Description: This aid is designed to prioritize work based on critical resources.
c. Analytic techniques: OT, MM, SIM, DA, AI

3-32. AID DESCRIPTOR: Operational Effectiveness
a. Product supported: Psychological Operations Annex
b. Description: This aid is designed to estimate the operational effectiveness of a given PSYOP course of action.
c. Analytic techniques: DA, MM

3-33. AID DESCRIPTOR: Optimal Atomic Demolition Munitions (ADM) Employment
a. Product supported: Engineer Annex - ADM Appendix
b. Description: This aid is designed to optimally select and emplace ADM.
c. Analytic techniques: OT, MM, SIM, DA, AI

3-34. AID DESCRIPTOR: Optimal Friendly Employment EA
a. Product supported: Electronic Warfare Annex
b. Description: This aid is designed to optimally employ electronic warfare assets.
c. Analytic techniques: SIM, AI, OT, DA

3-35. AID DESCRIPTOR: Organize for Combat (FS)
a. Product supported: Fire Support Annex
b. Description: This aid is designed to effectively organize for combat.
c. Analytic techniques: DA, AI, MM

3-36. AID DESCRIPTOR: Prescribed Chemical Load (PCL)
a. Product supported: Fire Support Annex
b. Description: This aid is designed to allocate chemical munitions based on availability, mission, and release policy.
c. Analytic techniques: MM, DA, AI

3-37. AID DESCRIPTOR: Prescribed Nuclear Load (PNL)
a. Product supported: Fire Support Annex
b. Description: This aid is designed to allocate nuclear munitions based on availability, mission, and release policy.
c. Analytic techniques: MM, DA, AI

3-38. AID DESCRIPTOR: Priorities/Allocation (ADA)
a. Product supported: Air Defense Annex
b. Description: This aid is designed to establish weapon control procedures and allocate weapon systems.
c. Analytic techniques: DA, MM, SIM, DA, AI

3-39. AID DESCRIPTOR: Predict Contamination (ID Affected Units)
a. Product supported: NBC 3 (Immediate Warning of Expected Contamination)
b. Description: This aid is designed to calculate expected hazard area and determine affected units.
c. Analytic techniques: MM, SIM

3-40. AID DESCRIPTOR: Priorities of Fire
a. Product supported: Fire Support Annex
b. Description: This aid is designed to assign priorities of fire to field artillery units.
c. Analytic techniques: DA, SIM, OT, AI

3-41. AID DESCRIPTOR: Rear Area Protection Capabilities
a. Product supported: Rear Area Protection Annex
b. Description: This aid is designed to evaluate rear area protection plans and identify assets for the rear battle.
c. Analytic techniques: SIM, MM, DA

3-42. AID DESCRIPTOR: Relative Combat Power
a. Product supported: Operations Estimate
b. Description: This aid is designed to estimate friendly and relative combat power.
c. Analytic techniques: MM

3-43. AID DESCRIPTOR: Determine Replacement Priorities
a. Product supported: OPORD (Service Support)
b. Description: This aid is designed to assign replacement priorities based on mission, strength, and location.
c. Analytic techniques: DA, SIM, AI

3-44. AID DESCRIPTOR: Route Evaluation (AVN)
a. Product supported: Aircraft Mission Request (Army Aviation)
b. Description: This aid is designed to evaluate a selected flight route in terms of risk and protection.
c. Analytic techniques: SIM, AI, OT

3-45. AID DESCRIPTOR: Task Organization
a. Product supported: OPORD (Task Organization)
b. Description: This aid is designed to organize combat and combat support units for combat based on mission, terrain, unit status, etc.
c. Analytic techniques: DA, AI, MM

3-46. AID DESCRIPTOR: Terrain Management
a. Product supported: OPORD (Execution)
b. Description: This aid is designed to assign units to terrain.
c. Analytic techniques: MM, OT, SIM

3-47. AID DESCRIPTOR: Time Analyzer
a. Product supported: Warning Order
b. Description: This aid is designed to time-sequence critical actions to ensure subordinate units have time to execute.
c. Analytic techniques: MM, DA

3-48. AID DESCRIPTOR: Target Allocation
a. Product supported: Chemical Support Annex
b. Description: This aid is designed to select chemical targets based on priority and chemical munitions availability.
c. Analytic techniques: SIM, AI, OT, DA

3-49. AID DESCRIPTOR: Target Susceptibility
a. Product supported: NBC Defense Annex
b. Description: This aid is designed to evaluate friendly units' susceptibility to an enemy NBC strike.
c. Analytic techniques: DA, SIM, AI

3-50. AID DESCRIPTOR: Troop Exposure
a. Product supported: NBC Defense Annex
b. Description: This aid is designed to evaluate and monitor NBC status of units.
c. Analytic techniques: MM

3-51. AID DESCRIPTOR: Unit Movement Planner
a. Product supported: Movement Order
b. Description: This aid is designed to plan and publish movement orders for units, brigade and below.
c. Analytic techniques: MM, SIM, AI, OT

3-52. AID DESCRIPTOR: Forecast Unit Status

a. Product supported: Project Unit Status

b. Description: This aid is designed to project unit status based on mission, current status, and environment factors; when necessary, it would activate a critical situation alert.

c. Analytic techniques: MM

3-53. AID DESCRIPTOR: Forecast Usage Rates

a. Product supported: Required Ammunition Supply Rate Report

b. Description: This aid is designed to forecast ammunition usage based on mission and unit status.

c. Analytic techniques: MM, SIM

ANNEX II TO APPENDIX I

DIVISION COMMANDER'S CRITICAL INFORMATION REQUIREMENTS
I. INTELLIGENCE

A. INSUM (date/time prepared)
   1. Priority Intelligence Requirements (PIR) responses
   2. Unit identification
   3. Locations
      (a) Units
      (b) Boundaries
      (c) Special targets
         (1) High value
         (2) Atypical
         (3) Intelligence assets
   3. Intentions
*   (a) Concentration of forces
      (b) Courses of action (attack, defend, etc.)
      (c) Most probable course of action/avenue of approach
*   (1) Location of main attack
*   (2) Type units and strength
      (d) Enemy intelligence collection priority
   4. Capabilities
      (a) General
         (1) Relative combat power
         (2) Air summary
         (3) Strengths and weaknesses in logistic/technical capabilities
         (4) Time/distance factors
         (5) Capability to hit high value friendly locations
         (6) Capability to influence friendly scheme of maneuver
      (b) Special and commander-selected
         (1) NBC, ADA
         (2) Airmobile, Airborne
***   (3) Engineer

B. Weather analysis
*** 1. General (river conditions, significant changes)
*   2. Capability to influence scheme (24, 36 hours)

C. Terrain analysis
*** 1. General (water, effects of combat, nature and relief)
   2. Trafficability

* BETAC Survey
** CCIR Survey
*** Soviet CIR

II. [illegible]
(as reported by an and separate Co)

A. Task organization
   1. Unit missions
   2. Current activity

B. Unit locations
   1. Unit identification
   2. Center mass
   3. Command post location
   4. FLOT
   5. Commander-selected units/activities (Ew, ELINT, attached)

C. Unit status (current and projected)
   1. Commander evaluation (ready? - yes/no - if no, when yes?)
   2. Battle resources
      (a) Pacing (critical items) - predicted change in status
* (1) Supply (ammo, POL, food)
      (2) Ew systems, and other specific to mission
** (3) Major weapon systems
      (b) Commander-selected
   3. Personnel
      (a) Officer and key MOS commander-selected
      (b) Radiation status
   4. MOPP
      (a) Current status
      (b) Time to remain at current status without mission degradation

D. Other friendly units
   1. Reserve
      (a) Time/distance factors
      (b) Location
      (c) Intended use/constraints
      (d) Commander evaluation of status
   2. Adjacent units
      (a) Location
      (b) Scheme/intent
      (c) Task organization
      (d) Commander evaluation of status
   3. Support units
      (a) Scheme/intent
      (b) Organization

* BETAC Survey
** CCIR Survey
*** Soviet CIR

III. AIR DEFENSE ARTILLERY (ADA)

A. Rules of Engagement (ROE)

B. Army Airspace Command and Control (A^2C^2)
(includes flight corridors, free flight areas)

C. Coverage (3-dimensional)
1. Friendly external to Division (HIMAD)
2. Non-divisional U.S. (HIMAD)
3. Divisional (SHORAD)
   (a) Organic
      (1) Unit status
      (2) Weapon status
      (3) Location of units
      (4) Priority of support
   (b) ADA weapon fire status (tight, hold, free)

D. Enemy air employment technique (number of aircraft by type-capability)

E. Command-selected capability/availability
1. TSQ-73
2. AWACS
3. APACHE
4. Sensors

* BETAC Survey
** CCIR Survey
*** Soviet CIR

IV. FIRE SUPPORT

A. Field artillery
   1. Organization for combat (DS, GS, GSR)
   2. Priority of fire
   3. Unit status/capabilities
      (a) Range fans
      (b) Tube/launcher status
** (c) Ammunition Available Supply Rates (ASR)
      (d) Commander-selected items/organizations

B. TACAIR (includes all air assets: USAF, USN, USMC, Allied)
   1. Availability (30 min, and 1 hr)
   2. Number of sorties/day
   3. FAC/ALO status by unit

C. Target acquisition
   1. Status
      (a) TPS-58
      (b) AN/TPQ-36, AN/TPQ-37 (FIREFINDER)
      (c) Commander-selected (attached and allied)
   2. Location

D. Electronic warfare schedule
   1. Priority
   2. Schedule by target/mission

E. SEAD schedule
   1. Priority
   2. Means available (EW, JAM, TACAIR, FA)

F. Nuclear/chemical
   1. Availability
      (a) Nuclear
      (b) Chemical
   2. Release policy

* BETAC Survey
** CCIR Survey
*** Soviet CIR

V. BATTLEFIELD SECRET /

A. Control measures
   1. Flight corridors
      (a) Minimum altitude
      (b) Maximum altitude
      (c) Routes
      (d) Effective time
* 2. Objective, axis of advance, boundaries, phase lines, prepared position
* 3. Main supply routes/lines of communications
** 4. Bridging and fording sites
   5. Avenues of approach

B. Key terrain

C. Barriers/obstacles (NBC areas, minefields, etc.)
   1. Friendly
   2. Enemy

D. Communications grid
   1. Friendly
   2. Allied
   3. Indigenous capabilities
   4. Electronic warfare network coverage (locations)
      (a) Friendly
      (b) Enemy

* BETAC Survey
** CCIR Survey
*** Soviet CIR

VI. COMBAT SUPPORT

A. Military police
   1. Capabilities (commander evaluation)
      (a) POW
      (b) MSR
      (c) RAOC
      (d) TOC security
   2. Unit status (commander evaluation)
   3. Equipment status (commander evaluation)

B. Engineer
   1. Capabilities (commander evaluation unique to mission type)
      (a) Attack
          (1) Bridging
          (2) Breaching
      (b) Defend
          (1) Ditching
          (2) Wire
          (3) Mines

      Based on: Troops
      Equipment Available
      Terrain

   2. Personnel status (commander evaluation)
   3. Equipment status (commander evaluation)

C. Signal
   1. Capabilities or available uncommitted (divisional,
      (a) MSE nodes
      (b) TACSAT terminals
      (c) Multichannel links
   2. Other assets
      (a) Capability
      (b) Availability

* BETAC Survey
** CCIR Survey
*** Soviet CIR

VII. COMBAT SERVICE SUPPORT (CSS)

A. Unit location

B. Unit status

C. Supply status
** 1. Commander's evaluation of status
** 2. Significant supply shortages

D. Main supply route status

E. Current priority of effort
** 1. Personnel replacement priority
** 2. Equipment replacement priority

F. Functional capability (commander evaluation)
1. Maintenance
   (a) Ground
   (b) Aircraft
   (c) Missile
2. Medical
3. Supply
4. Transportation

* oETAC Survey
** CCIR Survey
*** Soviet CIR

VIII. COMMAND GUIDANCE

A. Mission of higher unit
   1. Intent
   2. Concept
      (a) Scheme of maneuver
      (b) Priority of fire

B. Unit mision from higher (restated)
   1. Intent
   2. Concept
      (a) Scheme of maneuver
      (b) Priority of fire

C. Critical situation alert
   1. Target criteria
** (a) Named areas of interest
** (b) Target areas of interest
   2. Commander-selected special events
      (a) Enemy
* (1) Indications of hostilities
* (2) Significant changes
* (3) Changes of missions and tasks
      (b) Friendly
* (1) Host nation support
* (2) Significant changes
   3. Use of nuclear/chemical fire
      (a) In theatre/area of operation
      (b) Out of theatre

* BETAC Survey
** CCIR Survey
*** Soviet CIR

ANNEX III TO APPENDIX I

CCIR MAPPING

The following mapping of CCIR items to G3 Main aiding opportunities was accomplished to assist in assessing the importance of the aids. In order to expeditiously, yet satisfactorily, handle the volume of the CCIR, a few rules were developed for the mapping:

a. For a given aiding opportunity, if a CCIR item would be utilized or produced, it was listed; the greater the number of CCIR which were listed, the more critical the aid.

b. The major topic headings (I through VIII) were not descriptive enough to be used alone.

c. If two or more subelements of a heading were required, the next higher heading was used.

d. CCIR item VIII C (Command Guidance-Critical Situation Alert) was considered common to all analytic aids and therefore was not mapped.

e. Numbering of items in the CCIR mapping matched that of the CACDA document of 30 April 1985 (see annex II of appendix I); thus, there were two headings numbered I.A.3.

AID DESCRIPTOR	CCIR
Task Organization (OPORD)	Enemy Intentions (I.A.3) Enemy Combat Power (I.A.4.A.1.) Terrain Analysis (I.C.) Task Organization (II.A.) Unit Locations (II.B.) Unit Status (II.C.) Control Measures (V.A.) Key Terrain (V.C.) Barriers/Obstacles (V.C.) Engineer (VI.B.) Mission of High Unit (VIII.A.) Unit Mission from Higher (VIII.B.)
Terrain Management (OPORD)	Locations (I.A.3.) Intentions (I.A.3.) Capability (I.A.4.) Weather Analysis (I.B.) Terrain Analysis (I.C.) Other Friendly Units (II.D.) Barriers/Obstacles (V.C.) Field Artillery (IV.A.) Coverage (III.C.) Task Organization (II.A.) Unit Locations (II.B.) Unit Status (II.C.) Control Measures (V.A.) Key Terrain (V.B.) Unit Mission from Higher (VIII.B.) Mission of Higher Unit (VIII.A.) Engineer (VI.B.)

AID DESCRIPTOR	CCIR
Force Movement Analyzer (OPORD)	INSUM (I.A.) Weather Analysis (I.B.) Terrain Analysis (I.C.) Task Organization (II.A.) Unit Locations (II.B.) Unit Status (II.C.) Other Friendly Units (II.D.) Coverage (III.C.) Field Artillery (IV.A.) TACAIR (IV.B.) Nuclear/Chemical (IV.F.) Control Measures (V.A.) Key Terrain (V.B.) Barriers/Obstacles (V.C.) Communications Grid (V.D.) Military Police (VI.A.) Engineer (VI.B.) Signal (VI.C.) Main Supply Route Status (VII.D.) Functional Capability (VII.F.) Mission of Higher (VIII.A.) Unit Mission from Higher (VIII.B.)
Basic Load CSR (OPORD)	Intentions (I.A.3.) Unit Status (II.C.) Supply Status (VII.C.) MSR Status (VII.D.) Concept (VIII.A.2.) Concept (VIII.B.2.)
Fuel Consumption Rates (OPORD)	INSUM (I.A.) Weather Analysis (I.B.) Terrain Analysis (I.C.) Task Organization (II.A.) Unit Status (II.C.) Unit Locations (II.B.) Field Artillery (IV.A.) Control Measures (V.A.) Barriers/Obstacles (V.C.) Military Police (VI.A.) Engineer (VI.B.) Supply Status (VII.C.) MSR Status (VII.D.) Current Priority of Effort (VII.E.) Functional Capability (VII.F.) Mission of Higher (VIII.A.) Unit Mission from Higher (VIII.B.)
Replacement Priorities (OPORD)	Task Organization (II.A.) Unit Locations (II.B.) Unit Status (II.C.) Unit Status (VI.A.2.) Equipment Status (VI.A.3.) Personnel Status (VI.B.2.)

AID DESCRIPTOR	CCIR
Replacement Priorities (continued) (OPORD)	Equipment Status (VI.B.3.) Current Priority of Effort (VII.E.) Transportation (VII.F.4.) Unit Mission from Higner (VIII.B.) Unit Identification (I.A.2.)
Priorities of Fire (Fire Support Annex)	Locations (I.A.3.) Intentions (I.A.3.) Capabilities (I.A.4.) Weatner Analysis (I.B.) Terrain Analysis (I.C.) Task Organization (II.A.) Unit Locations (II.B.) Unit Status (II.C.) Field Artillery (IV.A.) TACAIR (IV.B.) Electronic Warfare Schedule (IV.D.) SEAD Schedule (IV.E.) Nuclear/Chemical (IV.F.) Control Measures (V.A.) Key Terrain (V.B.) Unit Mission from Higner (Restated)(VIII.B.)
Organization for Combat (Fire Support)	Intentions (I.A.4.) Capabilities (I.A.5.) Locations (I.A.3.) Task Organization (II.A.) Unit Locations (II.B.) Personnel (II.C.3.) Control Measures (V.A.) Key Terrain (V.B.) Field Artillery (IV.A.) TACAIR (IV.B.) Target Acquisition (IV.C.) Electronic Warfare Schedule (IV.D.) SEAD Schedule (IV.E.) Nuclear/Chemical (IV.F.) MSR Status (VII.D.) Unit Mission from Higner (Restated) (VIII.B.)

AID DESCRIPTOR	CCIR
PCL PIL (Fire Support Annex)	Locations (I.A.3.) Intentions (I.A.3.) Capabilities (I.A.4.) Control Measures (V.A.) Key Terrain (V.B.) Coverage (III.C.) Field Artillery (IV.A.) Nuclear/Chemical (IV.F.) Main Supply route Status (VII.D.) Mission of Higher Unit (VIII.A.) Unit Mission from Higher (VIII.B.)
Expenditure Rates/CSR (Fire Support Annex)	Intentions (I.A.3.) Capabilities (I.A.4.) Task Organization (II.A.) Intended Use/Constraints (II.D.1.C.) Key Terrain (V.B.) Field Artillery (IV.A.) TACAIR (IV.B.) Target Acquisition (IV.C.) Electronic Warfare Schedule (IV.D.) SEAD Schedule (IV.E.) MSR Status (VII.D.) Equipment Replacement Priority(VII.E.2.) Unit Mission from Higher (VIII.B.) Target Criteria (VIII.C.1.)
Priorities/Allocation (Air Defense Annex)	Locations (I.A.3.) Intention (I.A.4.) Capabilities (I.A.5.) Weather Analysis (I.B.) Terrain Analysis (I.C.) Task Organization (II.A.) Unit Locations (II.B.) Other Friendly Units (II.D.) Rules of Engagement (III.A.) Army Airspace Command & Control (III.B.) Coverage (III.C.) Enemy Air Employment Technique (III.D.) Command (III.E.) Control Measures (V.A.) Key Terrain (V.B.) Coverage (V.C.) Communications Grid (V.D.) Unit Mission from Higher (VIII.B.)

AID DESCRIPTOR	CCIR
Obstacle Preparation Denial Preparation Optimal ADM Employment (Engineer Annex)	Unit Identification (I.A.2.) Intentions (I.A.3.) Capabilities (I.A.4.) Weather Analysis (I.B.) Terrain Analysis (I.C.) Task Organization (II.A.) Unit Locations (II.B.) Unit Status (II.C.) Other Friendly Units (II.D.) Control Measures (V.A.) Key Terrain (V.B.) Barriers/Obstacles (V.C.) Availability (IV.F.2.) Engineer (VI.B.) Supply Status (VII.C.) MSR Status (VII.D.) Unit Mission from Higher (VIII.B.)
Aircraft Requirements (Army Aviation Annex)	Locations (I.A.3.) Intentions (I.A.3.) Capabilities (I.A.3.) Weather Analysis (I.B.) Task Organization (II.A.) Unit Locations (II.B.) Unit Status (II.C.) Control Measures (III.A.) Coverage (III.C.) SEAD Schedule (IV.E.) Rules of Engagement (V.A.) Army Airspace Command and Control (V.B.) Unit Mission from Higher (VIII.B.)
RAP Capabilities (Rear Area Protection Plan)	Intentions (I.A.3.) Capabilities (I.A.4.) Weather Analysis (I.B.) Terrain Analysis (I.C.) Task Organization (II.A.) Unit Locations (II.B.) Unit Status (II.C.) Other Friendly Units (II.D.) Field Artillery (4.A.) TACAIR (4.B.) Control Measures (V.A.) Barriers/Obstacles (V.C.) Military Police (VI.A.) Engineer (VI.B.) Signal (VI.C.) Unit Location (VII.A.) Mission of Higher Unit (VIII.A.) Unit Status (VII.B.)

AID DESCRIPTOR	CCIR
Control Procedures/Status (Airspace Management Annex)	Intentions (I.A.3.) Capabilities (I.A.4.) Weather Analysis (I.B.) Terrain Analysis (I.C.) Rules of Engagement (III.A.) A2C2 (III.B.) Unit Mission from Higher (VIII.B.) Coverage (III.C.) Enemy Air Employment Technique (III.D.) Command-Selected Capability/Availability (III.E.) TACAIR (IV.B.) SEAD Schedule (IV.E.) Control Measures (V.A.)
Operational Effectiveness (Psychological Operations Annex)	Locations (I.A.3.) Unit Mission from Higher (VIII.B.)
Troop Exposure (NBC Defense Annex)	Intentions (I.A.3.) Capabilities (I.A.4.) Weather Analysis (I.B.) Terrain Analysis (I.C.) Radiation Status (II.C.3.b.) Unit Locations (II.B.) MOPP (II.C.4.) Reserve (II.D.1.) Barriers/Obstacles (V.C.) Medical (VII.F.2.) Unit Mission from Higher (VIII.B.)
Target Susceptibility (NBC Defense Annex)	Intentions (I.A.3.) Locations (I.A.3.) Capabilities (I.A.) Weather Analysis (I.B.) Terrain Analysis (I.C.) Task Organization (II.A.) Unit Locations (II.B.) Unit Status (II.C.) Reserve (II.D.1.) Control Measures (V.A.) Capabilities (VI.B.1.) Nuclear/Chemical (IV.F.) Key Terrain (V.B.) Barriers/Obstacles (V.C.) Unit Mission from Higher (VIII.B.)

AID DESCRIPTOR	CCIR
Target Allocation (Chemical Support Annex)	Unit Identification (I.A.2.) Locations (I.A.3.) Intentions (I.A.3.) Capabilities (I.A.4.) Weather Analysis (I.B.) Terrain Analysis (I.C.) MOPP (II.C.4.) Other Friendly Units (II.D.) Control Measures (V.A.) Key Terrain (V.B.) Enemy (V.C.2.) Field Artillery (IV.A.) Nuclear/Chemical (IV.F.) Unit Mission from Higher (VIII.B.) Use of Nuclear/Chemical (VIII.C.3.)
Allocate Replacement Equipment, Supplies, Troops (Service Support Annex)	Intentions (I.A.3.) Capabilities (I.A.4.) Task Organization (II.A.) Unit Locations (II.B.) Unit Status (II.C.) Field Artillery (IV.A.) Functional Capability (VII.F.) Military Police (VI.A.) Engineer (VI.B.) Signal (VI.C.) Unit Location (VII.A.) Unit Status (VII.B.) Supply Status (VII.C.) MSR Status (VII.D.) Current Priority of Effort (VII.E.) Unit Mission from Higher (VIII.B.)
Optimal Friendly Employment (Electronic Warfare Annex)	Locations (I.A.3.) Intentions (I.A.3.) Capabilities (I.A.4.) Weather Analysis (I.B.) Terrain Analysis (I.C.) Unit Locations (II.B.) Unit Status (II.C.) Other Friendly Units (II.D.) Control Measures (V.A.) Key Terrain (V.B.) Communications Grid (V.D.) Electronic Warfare Schedule (IV.D.) Signal (VI.C.) Unit Mission from Higher (VIII.B.)

AID DESCRIPTOR	CCIR
Time Analyzer (Warning Order)	Locations (I.A.3.) Intentions (I.A.4.) Capabilities (I.A.5.) Weather Analysis (I.B.) Terrain Analysis (I.C.) Unit Locations (II.B.) Unit Status (II.C.) Unit Mission from Higher (VIII.B.)
Unit Movement Planner	INSUM (I.A.) Weather Analysis (I.B.) Terrain Analysis (I.C.) Task Organization (II.A.) Unit Locations (II.B.) Unit Status (II.C.) Other Friendly Units (II.D.) Coverage (III.C.) Field Artillery (IV.A.) TACAIR (IV.B.) Nuclear/Chemical (IV.F.) Control Measures (V.A.) Key Terrain (V.B.) Barriers/Obstacles (V.C.) Communications Grid (V.D.) Military Police (VI.A.) Engineer (VI.B.) Signal (VI.C.) Main Supply Route Status (VII.D.) Functional Capability (VII.F.) Mission of Higher (VIII.A.) Unit Mission from Higher (VIII.B.)
Air Movement Analyzer (Movement Order)	Locations (I.A.3.) Intentions (I.A.3.) Capabilities (I.A.4.) Weather Analysis (I.B.) Terrain Analysis (I.C.) Task Organization (II.A.) Unit Locations (II.B.) Unit Status (II.C.) Control Measure (V.A.) Other Friendly Units (II.D.) Barriers/Obstacles (V.C.) Coverage (III.C.) SEAD Schedule (IV.E.) Field Artillery (IV.A.) TACAIR (IV.B.) Aircraft (VII.F.1.b.) Electronic Warfare Schedule (IV.D.)

AID DESCRIPTOR	CCIR
Air Movement Analyzer (Movement Order) (continued)	Nuclear/Chemical (IV.F.) Rules of engagement (III.A.) A2C2 (III.B.) Enemy Air Employment Technique (III.D.) Unit Mission from Higher (VIII.B.)
Air Movement Planner (Movement Order)	Weather Analysis (I.B.) Task Organization (II.A.) Unit Locations (II.B.) Unit Status (II.C.) Control Measures (V.A.) SEAD Schedule (IV.E.) Field Artillery (IV.A.) Nuclear/Chemical (IV.F.) Rules of Engagement (III.A.) A2C2 (III.B.) Aircraft (VII.F.1.b.) Unit Mission from Higher (VIII.B.)
Route Evaluation (Aircraft Mission Request [Army Aviation])	Locations (I.A.3.) Capabilities (I.A.4.) Intentions (I.A.3.) Weather Analysis (I.B.) Terrain Analysis (I.C.) Coverage (III.C.) Enemy Air Employment (III.D.) Nuclear/Chemical (IV.F.) Barrier/Obstacles (V.C.) Control Measures (V.A.) Field Artillery (IV.A.) SEAD Schedule (IV.E.) Rules of Engagement (III.A.) A2C2 (III.B.) Mission of Higher Unit (VIII.A.) Unit Mission from Higher (VIII.B.)
Aircraft Asset Analyzer (Aircraft Mission Request [Army Aviation])	Unit Locations (II.B.) Unit Status (II.C.) Task Organization (II.A.) Control Measures (III.A.) SEAD Schedule (IV.E.) A2C2 (V.B.) Aircraft (VII.F.1.b.) Scheme of Maneuver (VIIII.B.1.a.)
Tube Replacement Forecast (Artillery Situation Report)	Intentions (I.A.3.) Capabilities (I.A.4.) Field Artillery (IV.A.) TACAIR (IV.B.) Electronic Warfare Schedule (IV.D.) Equipment Replacement Priority(VII.E.2.) SEAD Schedule (IV.E.) Nuclear/Chemical (IV.F.) Unit Mission from Higher (VIII.B.)

AID DESCRIPTOR	CCIR
Integrate CAS with Fire Support (Air Request/Task Message [Pre-Planned])	Locations (I.A.3.) Intentions (I.A.4.) Capabilities (I.A.5.) Weather Analysis (I.B.) Terrain Analysis (I.C.) Unit Locations (II.B.) Unit Status (II.C.) Coverage (III.C.) Control Measures (V.A.) Field Artillery (IV.A.) TACAIR (IV.B.) Electronic Warfare Schedule (IV.D.) SEAD Schedule (IV.E.) Nuclear/Chemical (IV.F.) Rules of Engagement (III.A.) Unit Mission from Higher (VIII.B.)
Fallout Prediction (Post Strike Analysis [Nuclear])	Weather Analysis (I.B.) Terrain Analysis (I.C.)
Damage Analysis (Effects on Enemy) (Post Strike Analysis [Nuclear])	Unit Identification (I.A.2.) Locations (I.A.3.) Weather Analysis (I.B.) Terrain Analysis (I.C.) Enemy (V.C.2.)
Chemical Effects Prediction (Chemical Strike Warn)	Locations (I.A.3.) Intentions (I.A.3.) Capabilitis (I.A.4.) Weather Analysis (I.B.) Terrain Analysis (I.C.) Unit Locations (II.B.) Unit Status (II.C.) Field Artillery (IV.A.) Military Police (VI.A.) Engineer (VI.B.) Signal (VI.C.) Unit Status (VII.B.)
Nuclear Effects Prediction (Nuclear Strike Warn)	Locations (I.A.3.) Intentions (I.A.3.) Capabilities (I.A.4.) Weather Analysis (I.B.) Terrain Analysis (I.C.) Unit Locations (II.B.) Unit Status (II.C.) Field Artillery (IV.A.) Military Police (VI.A.) Engineer (VI.B.) Signal (VI.C.) Unit Status (VII.B.)

AID DESCRIPTOR	CCIR
Obstacle Emplacement (Engineer Barrier Report)	Unit Identification (I.A.2.) Locations (I.A.3.) Intentions (I.A.3.) Capabilities (I.A.4.) Weather Analysis (I.B.) Terrain Analysis (I.C.) Task Organization (II.A.) Unit Locations (II.B.) Unit Status (II.C.) Field Artillery (IV.A.) Control Measures (V.A.) Key Terrain (V.B.) Barriers/Obstacles (V.C.) Engineer (VI.B.) Concept (VIII.B.2.)
Allocate Resources (Engineer Mission Coordination Sheet)	Engineer (VI.B.) Barriers/Obstacles (V.C.) Nuclear/Chemical (IV.F.) Supply Status (VII.C.) Supply (VII.F.3.) Unit Mission from Higher (VIII.B.)
Evaluate Damage Repair Alternates (Engineer Report [Damage])	Engineer (VI.B.) Weather Analysis (I.B.) Terrain Analysis (I.C.) Control Measures (V.A.) Key Terrain (V.B.) Barriers/Obstacles (V.C.) Supply Status (VII.C.) MSR Status (VII.D.) Supply (VII.F.3.) Unit Mission from Higher (VIII.B.)
Combat Effectiveness (Engineer Spot Report)	Barriers/Obstacles (V.C.) Engineer (VI.B.) Trafficability (I.C.2.) Bridging and Fording Sites (V.A.4.)
Allocate CAS and RECCE (Air Request/Task Message [Immediate])	Locations (I.A.3.) Intentions (I.A.4.) Capabilities (I.A.5.) Weather Analysis (I.B.) Terrain Analysis (I.C.) Unit Locations (II.B.) Unit Status (II.C.) Other Friendly Units (II.D.) Control Measures (V.A.) Key Terrain (V.B.) Field Artillery (IV.A.) TACAIR (IV.B.) Target Acquisition (IV.C.)

AIC DESCRIPTOR	CCIR
Allocate CAS and RECCE (Air Request/Task Message [Immediate]) (continued)	Electronic Warfare Schedule (IV.D.) SEAD Schedle (IV.E.) Nuclear/Chemical (IV.F.) Rules of Engagement (III.A.) Unit Missions from Higher (VIII.B.)
Allocate Critical Assets (ECM Mission Request)	Locations (I.A.3.) Capabilities (I.A.4.) Communications Grid (V.D.) Electronic Warfare Schedules (IV.D.) Unit Mission from Higher (VIII.B.)
NBC Effects Evaluation (NBC 2 [Evaluated Data Report])	Intentions (I.A.3.) Battle Resources (II.C.2.) Weather Analysis (I.B.) Terrain Analysis (I.C.) Personnel (II.C.3.) INSUM (I.A.) MOPP (II.C.4.) Use of Nuclear/Chemical Fire (VIII.C.3.)
Contamination Prediction (NBC 3 [Immediate Warning of Expected Contamination])	Weather Analysis (I.B.) Terrain Analysis (I.C.) Radiation Status (II.C.3.b.) MOPP (II.C.4.) Unit Mission from Higher (VIII.B.)
Hazard Areas (NBC 5 [Report of Areas of Actual Contamination])	Weather Analysis (I.B.) Terrain Analysis (I.C.) Unit Status (II.C.)
Forecast Usage Rates (Required Ammunition Supply Rate Report)	Intentions (I.A.3.) Capabilities (I.A.4.) Electronic Warfare Schedule (IV.D.) Rules of Engagement (III.A.) SEAD Schedule (IV.E.) Nuclear/Chemical (IV.F.) Unit Mission from Higher (VIII.B.)
Relative Combat Power (Operations Estimate)	Locations (I.A.3.) Intentions (I.A.3.) Capabilities (I.A.4.) Task Organization (II.A.) Unit Status (II.C.)

AIG DESCRIPTOR	CCIR
Relative Combat Power (Operations Estimate) (continued)	Divisional (III.C.3.) APACHE (III.E.3.) Reserve (II.D.1.) Support Units (II.D.3.) Field Artillery (IV.A.) TACAIR (IV.B.) Scheme of Maneuver (VIII.A.2.a.)
Compare Alternate Courses of Action (Operations Estimate)	INSUM (I.A.) Weather Analysis (I.B.) Terrain Analysis (I.C.) Task Organization (II.A.) Unit Location (II.B.) Unit Status (II.C.) Other Friendly Units (II.D.) Key Terrain (V.B.) Barriers/Obstacles (V.C.) Field Artillery (IV.A.) TACAIR (IV.B.) Target Acquisition (IV.C.) Nuclear/Chemical (IV.F.) Command-Selected (III.E.) Bridging and Fording Sites (V.A.4.) Coverage (III.C.) Engineer (VI.B.) Unit Status (VII.B.) Supply Status (VII.C.) MSR Status (VII.D.) Functional Capability (VII.F.) Mission from Higher Unit (VIII.A.)
Forecast Unit Status (Project Unit Status)	Intentions (I.A.3.) Capabilities (I.A.4.) Task Organization (II.A.) Unit Status (II.C.) Weather Analysis (I.B.) Terrain Analysis (I.C.) Nuclear/Chemical (IV.F.) Supply Status (VII.C.) MSR Status (VII.D.) Functional Capability (VII.F.) Rules of Engagement (III.A.) Coverage (III.C.) Military Police (VI.A.) Engineer (VI.B.) Signal (VI.C.) Unit Mission from Higher (VIII.B.)

AIU DESCRIPTOR	CCIR
Assign Critical Replacement Units, Personnel, and Materiel (Allocate/Prioritize Replacement Personnel, Materiel, and Units)	Intentions (I.A.3.) Capabilities (I.A.4.) Weather Analysis (I.B.) Terrain Analysis (I.C.) Task Organization (II.A.) Unit Status (II.C.) Reserve (II.D.1.) Unit Status/Capabilities (II.A.3.) Electronic Warfare Schedule (IV.D.) SEAD Schedule (IV.E.) Nuclear/Chemical (IV.F.) Rules of Engagement (III.A.) Unit Status (III.C.3.a.1.) Weapon Status (III.C.3.a.2.) Unit Status (VI.A.2.) Equipment Status (VI.A.3.) Personnel Status (VI.B.2.) Equipment Status (VI.B.3.) Unit Status (VII.B.) Supply Status (VII.C.) Maintenance (VII.F.1.) Unit Identification (I.A.2.) Locations (I.A.3.) Unit Locations (II.B.) Barriers/Obstacles (V.C.) MSR Status (VII.D.) Transportation (VII.F.4.) Unit Mission from Higher (VII.B.)
Assign PSYOP Assets (Psychological Operations Annex)	INSUM (I.A.) Weather Analysis (I.B.) Terrain Analysis (I.C.) Unit Locations (II.B.) Other Friendly Units (II.D.) Control Measures (V.A.) Key Terrain (V.B.) Barriers/Obstacles (V.C.) Communication Grid (V.D.) Signal (VI.C.) Unit Mission from Higher (VIII.B.)

AID DESCRIPTOR	CCIR
Pre-Position Decontamination Supplies (NBC Defense Annex)	Locations (I.A.3.) Intentions (I.A.3.) Capabilities (I.A.4.) Weather Analysis (I.B.) Terrain Analysis (I.C.) Task Organization (II.A.) Unit Locations (II.B.) Unit Status (II.C.) Reserve (II.D.1.) Field Artillery (IV.A.) Nuclear/Chemical (IV.F.) Control Measures (V.A.) Barriers/Obstacles (V.C.) Unit Location (VII.A.) Unit Status (VII.B.) Supply Status (VII.C.) MSR Status (VII.D.) Transportation (VII.F.4.) Unit Mission from Higher (VIII.B.)
Relative Combat Power (Operations Estimate)	INSUM (I.A.) Weather Analysis (I.B.) Terrain Analysis (I.C.) Task Organization (II.A) Unit Status (II.C.) Reserve (II.D.1.) Divisional (III.C.3.) Field Artillery (IV.A.) TACAIR (IV.B.) Engineer (VI.B.)

ANNEX IV TO APPENDIX I

AID PRIORITIZATION WORKSHEETS

I-IV-1. PROCEDURE. For each aid requiring analytic techniques, a prioritization worksheet was prepared and an assessment was recorded by CAORA analysts for each subcriterion of importance and feasibility. An interval scale was used to express the extent to which each potential analytic aid satisfied each subcriterion. For each aid, the analysts reviewed the relevant materials to better understand the purpose of the aid, the potential analytic techniques, and the extent of support to the CCIR. A mapping was made to determine which CCIR subcategories were required or would be produced by the aid. After discussion, a consensus was obtained concerning the ranking of the aid for each subcriterion. The result was a raw score for each subcriterion. The raw scores were added to obtain a total raw score for each aid. The total raw score reflects the value of each aid if all criteria (importance, feasibility) and the six subcriteria are equally weighted. Weights for the criteria of importance and feasibility were obtained by the method of pairwise comparison. Within each criterion, relative weights were obtained for the subcriteria using the same method. The relative weight of each subcriterion was multiplied by the weight of its corresponding criterion to obtain six subcriteria weights that are comparable across criteria and sum to one. These relative weights were multiplied by raw subcriteria scores to obtain adjusted subcriteria scores. Adjusted subcriteria scores were then added to obtain an adjusted total score for each aid. The adjusted total score was the primary basis for recommended priority for development of potential aid candidates.

I-IV-2. WORKSHEETS. The 53 aid prioritization worksheets appear on the following pages. Each worksheet shows aid descriptor, aid number, product supported, the primary and secondary analytic techniques to be employed, tasks supported (by number, according to the compiled list in the matrix of appendix C), total number of Division Commander's Critical Information Requirements (CCIR) supported (out of a possible 33 items at the first subheading level, like I.A., I.B., etc.), aid description, and ranking by scales of importance and feasibility (three scales each). Raw scores, weightings, adjusted scores, and total raw and adjusted scores are shown.

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Allocate Critical Assets (ECM)
2. AID NUMBER: 3-1
3. PRODUCT SUPPORTED: ECM Mission Request
4. PRIMARY ANALYTIC TECHNIQUE: Simulation
5. SUPPORTING ANALYTIC TECHNIQUE(S): Math Model, Artificial Intelligence (AI)
6. TASK(S) SUPPORTED (BY NUMBER): 3i, 3j
7. CCIR SUPPORTED (TOTAL NUMBER): 4
8. BRIEF AID DESCRIPTION: This aid is designed to determine the optimum way to allocate limited ECM assets.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	2.9	.109	.316
b. Time and Quality Savings (Small, Large)	2.6	.198	.515
c. CCIR (Few, Many)	1.2	.360	.432

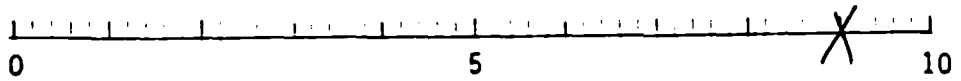
10. RANKING BY SCALES (FEASIBILITY):

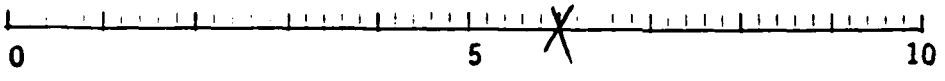
a. Operational (Low, High)	4.7	.190	.893
b. Economical (High Cost, Low Cost)	7.8	.048	.374
c. Technical (High Risk, Low Risk)	7.4	.095	.703
TOTAL SCORES:	26.6	1.000	3.233

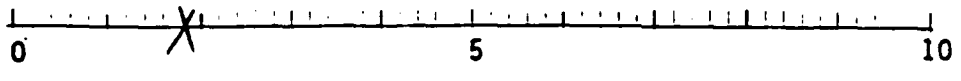
AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Aircraft Asset Analyzer
2. AID NUMBER: 3-2
3. PRODUCT SUPPORTED: Aircraft Mission Request (Army Aviation)
4. PRIMARY ANALYTIC TECHNIQUE: Math Model
5. SUPPORTING ANALYTIC TECHNIQUE(S): Simulation
6. TASK(S) SUPPORTED (BY NUMBER): 1d, 1l, 3c
7. CCIR SUPPORTED (TOTAL NUMBER): 6
8. BRIEF AID DESCRIPTION: This aid is designed to analyze whether sufficient aviation assets exist based on mission, timeframe, and priorities.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	9.0	.109	.981
b. Time and Quality Savings (Small, Large)	6.0	.198	1.188
c. CCIR (Few, Many)	1.8	.360	.648

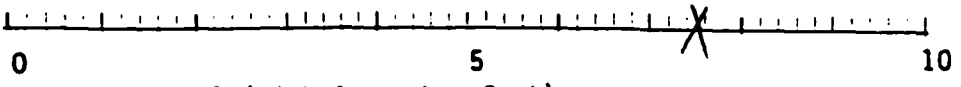


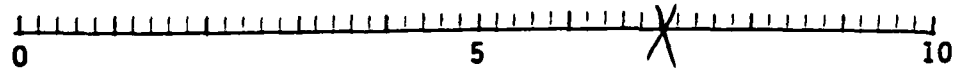


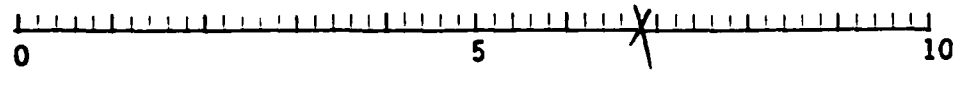


10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	7.5	.190	1.425
b. Economical (High Cost, Low Cost)	7.0	.048	.336
c. Technical (High Risk, Low Risk)	6.8	.095	.646







TOTAL SCORES:	38.1	1.000	5.224

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Aircraft Requirements
2. AID NUMBER: 3-3
3. PRODUCT SUPPORTED: Army Aviation Annex
4. PRIMARY ANALYTIC TECHNIQUE: Math Model
5. SUPPORTING ANALYTIC TECHNIQUE(S): AI, Simulation
6. TASK(S) SUPPORTED (BY NUMBER): 1a, 1d, 1l, 3a
7. CCIR SUPPORTED (TOTAL NUMBER): 11
8. BRIEF AID DESCRIPTION: This aid is designed to determine number of aircraft required to support the mission.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	1.7	.109	.185
b. Time and Quality Savings (Small, Large)	7.3	.198	1.445
c. CCIR (Few, Many)	3.3	.360	1.188

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	5.8	.190	1.102
b. Economical (High Cost, Low Cost)	6.0	.048	.288
c. Technical (High Risk, Low Risk)	5.4	.095	.513
TOTAL SCORES:	29.5	1.000	4.721

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Air Movement Analyzer
2. AID NUMBER: 3-4
3. PRODUCT SUPPORTED: Movement Order
4. PRIMARY ANALYTIC TECHNIQUE: Math Model
5. SUPPORTING ANALYTIC TECHNIQUE(S): Simulation, AI
6. TASK(S) SUPPORTED (BY NUMBER): 1a
7. CCIR SUPPORTED (TOTAL NUMBER): 19
8. BRIEF AID DESCRIPTION: This aid is designed to analyze whether there are sufficient time and assets to accomplish the stated mission.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	4.6	.109	.501
b. Time and Quality Savings (Small, Large)	8.1	.198	1.604
c. CCIR (Few, Many)	5.8	.360	2.088

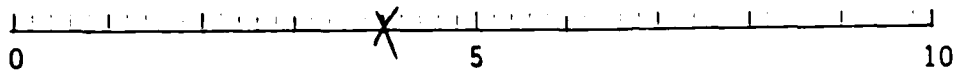
10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	7.0	.190	1.330
b. Economical (High Cost, Low Cost)	8.5	.048	.408
c. Technical (High Risk, Low Risk)	7.4	.095	.703
TOTAL SCORES:	41.4	1.000	6.634

AID PRIORITIZATION WORKSHEET

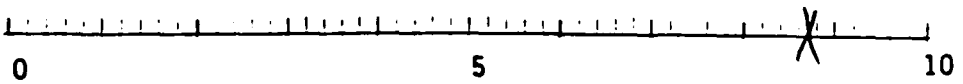
1. AID DESCRIPTOR: Air Movement Planner
2. AID NUMBER: 3-5
3. PRODUCT SUPPORTED: Movement Order
4. PRIMARY ANALYTIC TECHNIQUE: Multi Model
5. SUPPORTING ANALYTIC TECHNIQUE(S): Optimization Technique
6. TASK(S) SUPPORTED (BY NUMBER): 1a
7. CCIR SUPPORTED (TOTAL NUMBER): 11
8. BRIEF AID DESCRIPTION: This aid is designed to automate the "stubby pencil" calculations of an air movement table.
9. RANKING BY SCALES (IMPORTANCE):

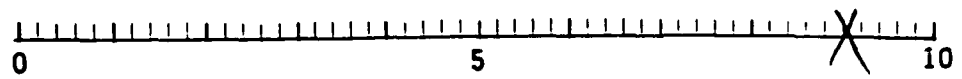
	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	4.0	.109	.436
b. Time and Quality Savings (Small, Large)	8.5	.198	1.683
c. CCIR (Few, Many)	3.3	.360	1.188

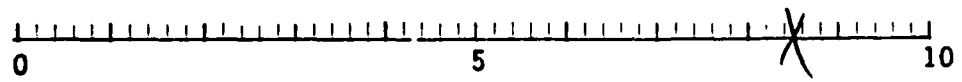


10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	8.7	.190	1.653
b. Economical (High Cost, Low Cost)	9.0	.048	.432
c. Technical (High Risk, Low Risk)	8.5	.095	.808
TOTAL SCORES:	42.0	1.000	6.200







AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Allocate Replacement Equipment, Supplies, and Troops
2. AID NUMBER: 5-6
3. PRODUCT SUPPORTED: Service Support Annex
4. PRIMARY ANALYTIC TECHNIQUE: Decision Analysis
5. SUPPORTING ANALYTIC TECHNIQUE(S): Math Model, Simulation, Optimization Technique, AI
6. TASK(S) SUPPORTED (BY NUMBER): 1f, 1a, 3a
7. CCIR SUPPORTED (TOTAL NUMBER): 15
8. BRIEF AID DESCRIPTION: This aid is designed to determine the best use of replacement equipment, supplies, and troops.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	6.0	.109	.654
b. Time and Quality Savings (Small, Large)	4.6	.198	.911
c. CCIR (Few, Many)	4.6	.360	1.656

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	4.1	.190	.779
b. Economical (High Cost, Low Cost)	2.5	.048	.120
c. Technical (High Risk, Low Risk)	3.0	.095	.285
TOTAL SCORES:	24.8	1.000	4.405

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Allocate Resources
2. AID NUMBER: 3-7
3. PRODUCT SUPPORTED: Engineer Mission Coordination Sheet
4. PRIMARY ANALYTIC TECHNIQUE: Math Model
5. SUPPORTING ANALYTIC TECHNIQUE(S): Simulation, Decision Analysis, AI
6. TASK(S) SUPPORTED (BY NUMBER): 1i, 3b, 3e, 7d
7. CCIR SUPPORTED (TOTAL NUMBER): 5
8. BRIEF AID DESCRIPTION: This aid is designed to allocate critical resources within the Engineer functional area.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	7.0	.109	.763
b. Time and Quality Savings (Small, Large)	4.8	.198	.950
c. CCIR (Few, Many)	1.5	.360	.540

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	6.6	.190	1.254
b. Economical (High Cost, Low Cost)	7.4	.048	.355
c. Technical (High Risk, Low Risk)	6.8	.095	.646
TOTAL SCORES:	34.1	1.000	4.508

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Assign Critical Replacement Units, Personnel, and Materiel
2. AID NUMBER: 3-8
3. PRODUCT SUPPORTED: Allocate/Prioritize Replacement Personnel, Material, and Units
4. PRIMARY ANALYTIC TECHNIQUE: Decision Analysis
5. SUPPORTING ANALYTIC TECHNIQUE(S): Math Model, Simulation, Optimization Technique, AI
6. TASK(S) SUPPORTED (BY NUMBER): 1b, 1c, 3a, 3b, 3c, 3e, 3f, 7a, 7b, 7d
7. CCIR SUPPORTED (TOTAL NUMBER): 18
8. BRIEF AID DESCRIPTION: This aid is designed to make allocations based on need and is similar to aid Allocate Replacement Equipment, Supplies, and Troops.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	5.5	.109	.600
b. Time and Quality Savings (Small, Large)	5.0	.198	.990
c. CCIR (Few, Many)	5.5	.360	1.980

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	8.0	.190	1.520
b. Economical (High Cost, Low Cost)	8.1	.048	.389
c. Technical (High Risk, Low Risk)	7.3	.095	.694
TOTAL SCORES:	39.4	1.000	6.173

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Assign PSYOP Assets
2. AID NUMBER: 3-9
3. PRODUCT SUPPORTED: Psychological Operations Annex
4. PRIMARY ANALYTIC TECHNIQUE: Decision Analysis
5. SUPPORTING ANALYTIC TECHNIQUE(S): AI, Math Model, Optimization Technique, Simulation
6. TASK(S) SUPPORTED (BY NUMBER): 1a, 3a
7. CCIR SUPPORTED (TOTAL NUMBER): 11
8. BRIEF AID DESCRIPTION: This aid is designed to optimally assign psychological elements and equipment.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	1.4	.109	.153
b. Time and Quality Savings (Small, Large)	2.5	.198	.495
c. CCIR (Few, Many)	3.3	.360	1.188

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	3.7	.190	.703
b. Economical (High Cost, Low Cost)	4.1	.048	.197
c. Technical (High Risk, Low Risk)	3.4	.095	.323
TOTAL SCORES:	18.4	1.000	3.059

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Basic Load
2. AID NUMBER: 3-10
3. PRODUCT SUPPORTED: OPORD (Service Support)
4. PRIMARY ANALYTIC TECHNIQUE: Math Model
5. SUPPORTING ANALYTIC TECHNIQUE(S): AI, Simulation
6. TASK(S) SUPPORTED (BY NUMBER): 1a, 2a, 2b, 3a
7. CCIR SUPPORTED (TOTAL NUMBER): 3
8. BRIEF AID DESCRIPTION: This aid is designed to determine basic load based on ammunition availability, intensity of conflict, and resupp
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	3.9	.109	.425
b. Time and Quality Savings (Small, Large)	7.5	.198	1.485
c. CCIR (Few, Many)	0.9	.360	.324

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	9.2	.190	1.748
b. Economical (High Cost, Low Cost)	8.5	.048	.408
c. Technical (High Risk, Low Risk)	9.0	.095	.855
TOTAL SCORES:	39.0	1.000	5.245

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Allocate Combat Air Support (CAS) and Reconnaissance (RECCE) Aircraft
2. AID NUMBER: 3-11
3. PRODUCT SUPPORTED: Air Request/Task Message
4. PRIMARY ANALYTIC TECHNIQUE: Decision Analysis
5. SUPPORTING ANALYTIC TECHNIQUE(S): Simulation, AI
6. TASK(S) SUPPORTED (BY NUMBER): 3c, 4a
7. CCIR SUPPORTED (TOTAL NUMBER): 11
8. BRIEF AID DESCRIPTION: This aid is designed to determine best utilization of CAS and RECCE aircraft.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	7.3	.109	.796
b. Time and Quality Savings (Small, Large)	3.4	.198	.673
c. CCIR (Few, Many)	3.3	.360	1.188

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	8.3	.190	1.577
b. Economical (High Cost, Low Cost)	3.8	.048	.182
c. Technical (High Risk, Low Risk)	5.3	.095	.504
TOTAL SCORES:	31.4	1.000	4.920

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Combat Effectiveness (Obstacles)
2. AID NUMBER: 3-12
3. PRODUCT SUPPORTED: Engineer Spot Report
4. PRIMARY ANALYTIC TECHNIQUE: Math Model
5. SUPPORTING ANALYTIC TECHNIQUE(S): Optimization Technique
6. TASK(S) SUPPORTED (BY NUMBER): 3c
7. CCIR SUPPORTED (TOTAL NUMBER): 2
8. BRIEF AID DESCRIPTION: This aid is designed to evaluate the effectiveness of barriers and obstacles.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	6.6	.109	.719
b. Time and Quality Savings (Small, Large)	2.4	.198	.475
c. CCIR (Few, Many)	0.6	.360	.216

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	3.6	.190	.684
b. Economical (High Cost, Low Cost)	4.6	.048	.221
c. Technical (High Risk, Low Risk)	3.4	.095	.323
TOTAL SCORES:	21.2	1.000	2.638

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Compare Alternate Courses of Action
2. AID NUMBER: 3-13
3. PRODUCT SUPPORTED: Operations Estimate
4. PRIMARY ANALYTIC TECHNIQUE: Decision Analysis
5. SUPPORTING ANALYTIC TECHNIQUE(S): AI, Math Model, Optimization Technique, Simulation
6. TASK(S) SUPPORTED (BY NUMBER): all of 1, all of 2, 4b, 4c, 6a, 6b, 6d, all of 7
7. CCIR SUPPORTED (TOTAL NUMBER): 21
8. BRIEF AID DESCRIPTION: This aid is designed to analyze alternatives.

9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	2.1	.109	.229
b. Time and Quality Savings (Small, Large)	9.0	.198	1.782
c. CCIR (Few, Many)	6.4	.360	2.304

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	4.6	.190	.874
b. Economical (High Cost, Low Cost)	2.2	.048	.106
c. Technical (High Risk, Low Risk)	1.8	.095	.171
TOTAL SCORES:	26.1	1.000	5.466

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Control Procedures / Status
2. AID NUMBER: 3-14
3. PRODUCT SUPPORTED: Airspace Management Annex
4. PRIMARY ANALYTIC TECHNIQUE: Decision Analysis
5. SUPPORTING ANALYTIC TECHNIQUE(S): Simulation, AI
6. TASK(S) SUPPORTED (BY NUMBER): 1a, 3a
7. CCIR SUPPORTED (TOTAL NUMBER): 12
8. BRIEF AID DESCRIPTION: This aid is designed to analyze various control methods.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	3.0	.109	.327
b. Time and Quality Savings (Small, Large)	7.2	.198	1.426
c. CCIR (Few, Many)	3.6	.360	1.296

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	4.2	.190	.798
b. Economical (High Cost, Low Cost)	1.4	.048	.067
c. Technical (High Risk, Low Risk)	2.3	.095	.219
TOTAL SCORES:	21.7	1.000	4.133

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Controlled Supply Rate (CSR)
2. AID NUMBER: 3-15
3. PRODUCT SUPPORTED: OPORD (Service Support)
4. PRIMARY ANALYTIC TECHNIQUE: Math Model
5. SUPPORTING ANALYTIC TECHNIQUE(S): N/A
6. TASK(S) SUPPORTED (BY NUMBER): 1a, 2a, 2b, 3a
7. CCIR SUPPORTED (TOTAL NUMBER): 3
8. BRIEF AID DESCRIPTION: This aid is designed to analyze ammunition expenditure rates and, where required, recommend control rate restrictions.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	1.6	.109	.174
b. Time and Quality Savings (Small, Large)	8.7	.198	1.723
c. CCIR (Few, Many)	0.9	.360	.324

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	8.3	.190	1.577
b. Economical (High Cost, Low Cost)	7.5	.048	.360
c. Technical (High Risk, Low Risk)	8.0	.095	.760
TOTAL SCORES:	35.0	1.000	4.918

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Damage Analysis (Effects on Enemy)
2. AID NUMBER: 3-16
3. PRODUCT SUPPORTED: Post Strike Analysis (Nuclear)
4. PRIMARY ANALYTIC TECHNIQUE: Math Model
5. SUPPORTING ANALYTIC TECHNIQUE(S): Simulation
6. TASK(S) SUPPORTED (BY NUMBER): 1e, 3b, 3h
7. CCIR SUPPORTED (TOTAL NUMBER): 3
8. BRIEF AID DESCRIPTION: This aid is designed to analyze/predict damage to the enemy as a result of nuclear engagement.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	1.4	.109	.153
b. Time and Quality Savings (Small, Large)	4.2	.198	.832
c. CCIR (Few, Many)	0.9	.360	.324

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	8.3	.190	1.577
b. Economical (High Cost, Low Cost)	7.5	.048	.360
c. Technical (High Risk, Low Risk)	8.2	.095	.779
TOTAL SCORES:	30.5	1.000	4.025

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Evaluate Damage Repair Alternatives
2. AID NUMBER: 3-17
3. PRODUCT SUPPORTED: Engineer Report (Damage)
4. PRIMARY ANALYTIC TECHNIQUE: Decision Analysis
5. SUPPORTING ANALYTIC TECHNIQUE(S): Simulation
6. TASK(S) SUPPORTED (BY NUMBER): 3b, 3e, 7c
7. CCIR SUPPORTED (TOTAL NUMBER): 10
8. BRIEF AID DESCRIPTION: This aid is designed to evaluate the impact of the damage and the various options of repair.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	3.5	.109	.382
b. Time and Quality Savings (Small, Large)	7.4	.198	1.465
c. CCIR (Few, Many)	3.0	.360	1.080

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	6.0	.190	1.140
b. Economical (High Cost, Low Cost)	4.7	.048	.226
c. Technical (High Risk, Low Risk)	7.1	.095	.675
TOTAL SCORES:	31.7	1.000	4.968

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Pre-Position Asset Analysis
2. AID NUMBER: 3-18
3. PRODUCT SUPPORTED: NBC Defense Annex
4. PRIMARY ANALYTIC TECHNIQUE: Decision Analysis
5. SUPPORTING ANALYTIC TECHNIQUE(S): Simulation, AI
6. TASK(S) SUPPORTED (BY NUMBER): 1a, 3a, 5c
7. CCIR SUPPORTED (TOTAL NUMBER): 15
8. BRIEF AID DESCRIPTION: This aid is designed to ascertain the best location and quantities for pre-positioning.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	1.2	.109	.131
b. Time and Quality Savings (Small, Large)	7.3	.198	1.445
c. CCIR (Few, Many)	4.6	.360	1.656

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	6.4	.190	1.216
b. Economical (High Cost, Low Cost)	6.8	.048	.326
c. Technical (High Risk, Low Risk)	7.5	.095	.713
TOTAL SCORES:	33.8	1.000	5.487

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Serial Preparation
2. AID NUMBER: 3-19
3. PRODUCT SUPPORTED: Engineer Annex - Serial Appendix
4. PRIMARY ANALYTIC TECHNIQUE: Optimization Techniques
5. SUPPORTING ANALYTIC TECHNIQUE(S): Math Model, Simulation, AI, Decision Analysis
6. TASK(S) SUPPORTED (BY NUMBER): 1a, 1i, 3a
7. CCIR SUPPORTED (TOTAL NUMBER): 14
8. BRIEF AID DESCRIPTION: This aid is designed to prioritize the placement of appropriate obstacles.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	2.4	.109	.262
b. Time and Quality Savings (Small, Large)	8.4	.198	1.663
c. CCIR (Few, Many)	4.2	.360	1.512

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	7.2	.190	1.368
b. Economical (High Cost, Low Cost)	4.2	.048	.202
c. Technical (High Risk, Low Risk)	6.1	.095	.580
TOTAL SCORES:	32.5	1.000	5.587

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Chemical Effects Prediction
2. AID NUMBER: 3-20
3. PRODUCT SUPPORTED: Chemical Strike Warning
4. PRIMARY ANALYTIC TECHNIQUE: Math Model
5. SUPPORTING ANALYTIC TECHNIQUE(S): N/A
6. TASK(S) SUPPORTED (BY NUMBER): 1e, 5b, 5c
7. CCIR SUPPORTED (TOTAL NUMBER): 10
8. BRIEF AID DESCRIPTION: This aid is designed to determine potential effects and recommended actions to minimize those effects.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	3.2	.109	.349
b. Time and Quality Savings (Small, Large)	7.2	.198	1.426
c. CCIR (Few, Many)	3.0	.360	1.080

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	8.3	.190	1.577
b. Economical (High Cost, Low Cost)	5.6	.048	.269
c. Technical (High Risk, Low Risk)	6.3	.095	.599
TOTAL SCORES:	33.6	1.000	5.300

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Nuclear Effects Prediction
2. AID NUMBER: 3-21
3. PRODUCT SUPPORTED: Nuclear Strike Warning
4. PRIMARY ANALYTIC TECHNIQUE: Math Model
5. SUPPORTING ANALYTIC TECHNIQUE(S): N/A
6. TASK(S) SUPPORTED (BY NUMBER): 1e, 5c
7. CCIR SUPPORTED (TOTAL NUMBER): 10
8. BRIEF AID DESCRIPTION: This aid is designed to determine potential effects and recommend action to minimize those effects.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	1.2	.109	.131
b. Time and Quality Savings (Small, Large)	7.5	.198	1.485
c. CCIR (Few, Many)	3.0	.360	1.080

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	7.8	.190	1.482
b. Economical (High Cost, Low Cost)	6.8	.048	.326
c. Technical (High Risk, Low Risk)	7.7	.095	.732
TOTAL SCORES:	34.0	1.000	5.236

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Expenditure Rates
2. AID NUMBER: 3-22
3. PRODUCT SUPPORTED: Fire Support Annex
4. PRIMARY ANALYTIC TECHNIQUE: Math Model
5. SUPPORTING ANALYTIC TECHNIQUE(S): Optimization Technique, Decision Analysis, Simulation
6. TASK(S) SUPPORTED (BY NUMBER): 1a, 1d, 3a
7. CCIR SUPPORTED (TOTAL NUMBER): 10
8. BRIEF AID DESCRIPTION: This aid is designed to determine expenditure rates and, when necessary, CSR based on mission and unit.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	1.8	.109	.196
b. Time and Quality Savings (Small, Large)	6.6	.198	1.307
c. CCIR (Few, Many)	3.0	.360	1.080

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	7.8	.190	1.482
b. Economical (High Cost, Low Cost)	8.5	.048	.408
c. Technical (High Risk, Low Risk)	8.6	.095	.817
TOTAL SCORES:	36.3	1.000	5.290

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Fallout Prediction
2. AID NUMBER: 3-23
3. PRODUCT SUPPORTED: Post Strike Analysis (Nuclear)
4. PRIMARY ANALYTIC TECHNIQUE: Math Model
5. SUPPORTING ANALYTIC TECHNIQUE(S): N/A
6. TASK(S) SUPPORTED (BY NUMBER): 1e, 3b, 3h
7. CCIR SUPPORTED (TOTAL NUMBER): 2
8. BRIEF AID DESCRIPTION: This aid is designed to predict fallout as a result of a nuclear strike.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	1.2	.109	.131
b. Time and Quality Savings (Small, Large)	7.1	.198	1.406
c. CCIR (Few, Many)	0.6	.360	.216

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	8.2	.190	1.558
b. Economical (High Cost, Low Cost)	8.2	.048	.394
c. Technical (High Risk, Low Risk)	7.8	.095	.741
TOTAL SCORES:	33.1	1.000	4.446

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Force Movement Analyzer
2. AID NUMBER: 3-24
3. PRODUCT SUPPORTED: OPORD (Execution)
4. PRIMARY ANALYTIC TECHNIQUE: Mach Model
5. SUPPORTING ANALYTIC TECHNIQUE(S): Simulation
6. TASK(S) SUPPORTED (BY NUMBER): 1a, 2a, 2b, 3a
7. CCIR SUPPORTED (TOTAL NUMBER): 22
8. BRIEF AID DESCRIPTION: This aid is designed to investigate force movement alternatives and time required for force movement.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	3.9	.109	.425
b. Time and Quality Savings (Small, Large)	8.2	.198	1.624
c. CCIR (Few, Many)	6.7	.360	2.412

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	8.5	.190	1.615
b. Economical (High Cost, Low Cost)	7.3	.048	.350
c. Technical (High Risk, Low Risk)	7.3	.095	.694
TOTAL SCORES:	41.9	1.000	7.120

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Forecast Tube Replacement
2. AID NUMBER: 3-25
3. PRODUCT SUPPORTED: Artillery Situation Report
4. PRIMARY ANALYTIC TECHNIQUE: Math Model
5. SUPPORTING ANALYTIC TECHNIQUE(S): N/A
6. TASK(S) SUPPORTED (BY NUMBER): 1d, 3b, 3d, 3e
7. CCIR SUPPORTED (TOTAL NUMBER): 7
8. BRIEF AID DESCRIPTION: This aid is designed to forecast artillery tube replacement requirements based on current status and future missio
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	2.6	.109	.283
b. Time and Quality Savings (Small, Large)	6.3	.198	1.247
c. CCIR (Few, Many)	2.1	.360	.756

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	8.2	.190	1.558
b. Economical (High Cost, Low Cost)	8.2	.048	.394
c. Technical (High Risk, Low Risk)	7.6	.095	.722
TOTAL SCORES:	35.0	1.000	4.960

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Fuel Consumption Rates
2. AID NUMBER: 3-26
3. PRODUCT SUPPORTED: OPORD (Service Support)
4. PRIMARY ANALYTIC TECHNIQUE: Math Model
5. SUPPORTING ANALYTIC TECHNIQUE(S): N/A
6. TASK(S) SUPPORTED (BY NUMBER): 1a, 2a, 2b, 3a
7. CCIR SUPPORTED (TOTAL NUMBER): 17
8. BRIEF AID DESCRIPTION: This aid is designed to determine fuel requirements based on type vehicles, mission, terrain, weather, etc.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	4.2	.109	.458
b. Time and Quality Savings (Small, Large)	7.3	.198	1.445
c. CCIR (Few, Many)	5.2	.360	1.872

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	8.1	.190	1.539
b. Economical (High Cost, Low Cost)	8.4	.048	.403
c. Technical (High Risk, Low Risk)	7.6	.095	.722
TOTAL SCORES:	40.8	1.000	6.439

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Hazard Areas
2. AID NUMBER: 3-27
3. PRODUCT SUPPORTED: NBC 5 (Report of Areas of Actual Contamination)
4. PRIMARY ANALYTIC TECHNIQUE: Math Model
5. SUPPORTING ANALYTIC TECHNIQUE(S): AI
6. TASK(S) SUPPORTED (BY NUMBER): 5a
7. CCIR SUPPORTED (TOTAL NUMBER): 3
8. BRIEF AID DESCRIPTION: This aid is designed to determine actual contamination areas.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	2.5	.109	.273
b. Time and Quality Savings (Small, Large)	6.4	.198	1.267
c. CCIR (Few, Many)	0.9	.360	.324

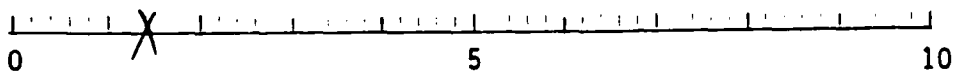
10. RANKING BY SCALES (FEASIBILITY):

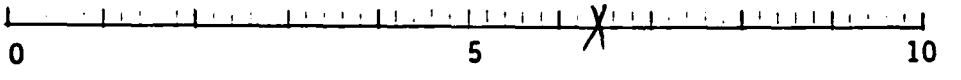
a. Operational (Low, High)	7.5	.190	1.425
b. Economical (High Cost, Low Cost)	7.8	.048	.374
c. Technical (High Risk, Low Risk)	8.1	.095	.770
TOTAL SCORES:	33.2	1.000	4.433

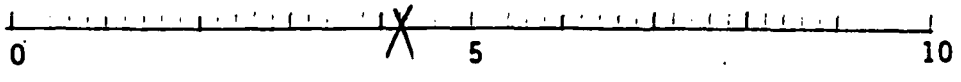
AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Integrate CAS with Fire Support Plan
2. AID NUMBER: 3-28
3. PRODUCT SUPPORTED: Air Request/Task Message (Re-Planned)
4. PRIMARY ANALYTIC TECHNIQUE: Decision Analysis
5. SUPPORTING ANALYTIC TECHNIQUE(S): AI, Simulation
6. TASK(S) SUPPORTED (BY NUMBER): 1d, 1K, 4a
7. CCIR SUPPORTED (TOTAL NUMBER): 14
8. BRIEF AID DESCRIPTION: This aid is designed to integrate close air support with the overall fire support plan.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	1.4	.109	.153
b. Time and Quality Savings (Small, Large)	6.4	.198	1.267
c. CCIR (Few, Many)	4.2	.360	1.512

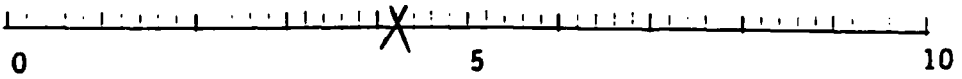


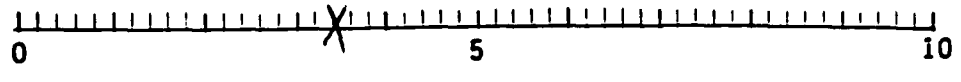


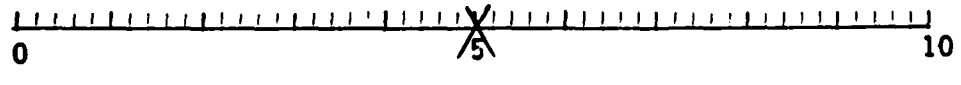


10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	4.2	.190	.798
b. Economical (High Cost, Low Cost)	3.4	.048	.163
c. Technical (High Risk, Low Risk)	5.0	.095	.475
TOTAL SCORES:	24.6	1.000	4.368







AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: NBC Effects Evaluation
2. AID NUMBER: 3-29
3. PRODUCT SUPPORTED: NBC 2 (Evaluated Data Report)
4. PRIMARY ANALYTIC TECHNIQUE: Math Model
5. SUPPORTING ANALYTIC TECHNIQUE(S): Simulation
6. TASK(S) SUPPORTED (BY NUMBER): 5a
7. CCIR SUPPORTED (TOTAL NUMBER): 4
8. BRIEF AID DESCRIPTION: This aid is designed to evaluate NBC strike data.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	1.6	.109	.174
b. Time and Quality Savings (Small, Large)	5.8	.198	1.148
c. CCIR (Few, Many)	1.2	.360	.432

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	8.2	.190	1.558
b. Economical (High Cost, Low Cost)	5.8	.048	.278
c. Technical (High Risk, Low Risk)	5.2	.095	.494
TOTAL SCORES:	27.8	1.000	4.084

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Obstacle Emplacement
2. AID NUMBER: 3-30
3. PRODUCT SUPPORTED: Engineer Barrier Report
4. PRIMARY ANALYTIC TECHNIQUE: Optimization Techniques
5. SUPPORTING ANALYTIC TECHNIQUE(S): Math Model, Simulation, Decision Analysis, AI
6. TASK(S) SUPPORTED (BY NUMBER): 1i, 3b, 3e
7. CCIR SUPPORTED (TOTAL NUMBER): 11
8. BRIEF AID DESCRIPTION: This aid is designed to optimally select types and locations of obstacles.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	2.5	.107	.273
b. Time and Quality Savings (Small, Large)	6.8	.198	1.346
c. CCIR (Few, Many)	3.3	.360	1.188

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	5.0	.190	.950
b. Economical (High Cost, Low Cost)	3.8	.048	.182
c. Technical (High Risk, Low Risk)	4.8	.095	.456
TOTAL SCORES:	26.2	1.000	4.395

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Obstacle Preparation
2. AID NUMBER: 3-31
3. PRODUCT SUPPORTED: Engineer Annex - Obstacle Appendix
4. PRIMARY ANALYTIC TECHNIQUE: Optimization Technique
5. SUPPORTING ANALYTIC TECHNIQUE(S): Math Model, Simulation, Decision Analysis, AI
6. TASK(S) SUPPORTED (BY NUMBER): 1a, 1i, 3a
7. CCIR SUPPORTED (TOTAL NUMBER): 14
8. BRIEF AID DESCRIPTION: This aid is designed to prioritize work based on critical resources.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	2.2	.109	.240
b. Time and Quality Savings (Small, Large)	7.4	.198	1.465
c. CCIR (Few, Many)	1.2	.360	1.512

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	5.8	.190	1.102
b. Economical (High Cost, Low Cost)	7.2	.048	.346
c. Technical (High Risk, Low Risk)	8.1	.095	.770
TOTAL SCORES:	34.9	1.000	5.435

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Operational Effectiveness
2. AID NUMBER: 3-32
3. PRODUCT SUPPORTED: Psychological Operations Annex
4. PRIMARY ANALYTIC TECHNIQUE: Decision Analysis
5. SUPPORTING ANALYTIC TECHNIQUE(S): Math Model
6. TASK(S) SUPPORTED (BY NUMBER): 1a, 3a
7. CCIR SUPPORTED (TOTAL NUMBER): 1
8. BRIEF AID DESCRIPTION: This aid is designed to estimate the operational effectiveness of a given PSYOP course of action.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	1.0	.109	.109
b. Time and Quality Savings (Small, Large)	4.4	.198	.871
c. CCIR (Few, Many)	0.3	.360	.108

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	3.8	.190	.722
b. Economical (High Cost, Low Cost)	2.8	.048	.134
c. Technical (High Risk, Low Risk)	2.6	.095	.247
TOTAL SCORES:	14.9	1.000	2.191

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Optimal Atomic Demolition Munitions (ADM) Employme
2. AID NUMBER: 3-33
3. PRODUCT SUPPORTED: Engineer Annex - ADM Appendix
4. PRIMARY ANALYTIC TECHNIQUE: Optimization Technique
5. SUPPORTING ANALYTIC TECHNIQUE(S): Math Model, Simulation, Decision Analysis, AI
6. TASK(S) SUPPORTED (BY NUMBER): 1a, 1i
7. CCIR SUPPORTED (TOTAL NUMBER): 14
8. BRIEF AID DESCRIPTION: This aid is designed to optimally select and emplace ADM.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	1.5	.109	.164
b. Time and Quality Savings (Small, Large)	3.4	.198	.673
c. CCIR (Few, Many)	4.2	.360	1.512

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	7.2	.190	1.368
b. Economical (High Cost, Low Cost)	7.6	.048	.365
c. Technical (High Risk, Low Risk)	7.4	.095	.703
TOTAL SCORES:	31.3	1.000	4.785

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Optimal Friendly Employment (EW)
2. AID NUMBER: 3-34
3. PRODUCT SUPPORTED: Electronic Warfare Annex
4. PRIMARY ANALYTIC TECHNIQUE: Simulation
5. SUPPORTING ANALYTIC TECHNIQUE(S): AI, Optimization Technique, Decision Analysis
6. TASK(S) SUPPORTED (BY NUMBER): 1g
7. CCIR SUPPORTED (TOTAL NUMBER): 12
8. BRIEF AID DESCRIPTION: This aid is designed to optimally employ electronic warfare assets.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	4.2	.109	.458
b. Time and Quality Savings (Small, Large)	7.5	.198	1.544
c. CCIR (Few, Many)	3.6	.360	1.296

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	3.6	.190	.684
b. Economical (High Cost, Low Cost)	4.6	.048	.221
c. Technical (High Risk, Low Risk)	4.4	.095	.418
TOTAL SCORES:	28.2	1.000	4.621

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Organize for Combat (FS)
2. AID NUMBER: 3-35
3. PRODUCT SUPPORTED: Fire Support Annex
4. PRIMARY ANALYTIC TECHNIQUE: Decision Analysis
5. SUPPORTING ANALYTIC TECHNIQUE(S): AI, Math Model
6. TASK(S) SUPPORTED (BY NUMBER): 1a, 1d, 3a
7. CCIR SUPPORTED (TOTAL NUMBER): 13
8. BRIEF AID DESCRIPTION: This aid is designed to effectively organize for combat.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	2.8	.109	.305
b. Time and Quality Savings (Small, Large)	5.7	.198	1.129
c. CCIR (Few, Many)	3.9	.360	1.404

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	5.2	.190	.988
b. Economical (High Cost, Low Cost)	4.4	.048	.211
c. Technical (High Risk, Low Risk)	6.1	.095	.580
TOTAL SCORES:	28.1	1.000	4.617

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Provided Chemical Fuel (PCL)
2. AID NUMBER: 3-36
3. PRODUCT SUPPORTED: Fire Support Annex
4. PRIMARY ANALYTIC TECHNIQUE: Mata Model
5. SUPPORTING ANALYTIC TECHNIQUE(S): Decision Analysis, AI
6. TASK(S) SUPPORTED (BY NUMBER): 1a, 1d, 3a
7. CCIR SUPPORTED (TOTAL NUMBER): 9
8. BRIEF AID DESCRIPTION: This aid is designed to allocate chemical munition based on availability, mission, and release policy.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	1.4	.109	.153
b. Time and Quality Savings (Small, Large)	6.2	.198	1.228
c. CCIR (Few, Many)	2.7	.360	.972

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	6.6	.190	1.254
b. Economical (High Cost, Low Cost)	7.6	.048	.365
c. Technical (High Risk, Low Risk)	7.5	.095	.713
TOTAL SCORES:	32.0	1.000	4.685

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Prescribed Nuclear Load (PNL)
2. AID NUMBER: 3-37
3. PRODUCT SUPPORTED: Fire Support Annex
4. PRIMARY ANALYTIC TECHNIQUE: Math Model
5. SUPPORTING ANALYTIC TECHNIQUE(S): Decision Analysis, AI
6. TASK(S) SUPPORTED (BY NUMBER): 1a, 1d, 3a
7. CCIR SUPPORTED (TOTAL NUMBER): 9
8. BRIEF AID DESCRIPTION: This aid is designed to allocate nuclear munitions based on availability, mission, and release policy.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	1.4	.109	.153
b. Time and Quality Savings (Small, Large)	6.2	.198	1.228
c. CCIR (Few, Many)	2.7	.360	.972

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	6.6	.190	1.254
b. Economical (High Cost, Low Cost)	7.6	.048	.365
c. Technical (High Risk, Low Risk)	7.5	.095	.713
TOTAL SCORES:	32.0	1.000	4.685

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Prioritize/Allocation (ADA)
2. AID NUMBER: 3-38
3. PRODUCT SUPPORTED: Air Defense Annex
4. PRIMARY ANALYTIC TECHNIQUE: Decision Analysis
5. SUPPORTING ANALYTIC TECHNIQUE(S): Math Model, Simulation, Decision Analysis, AI
6. TASK(S) SUPPORTED (BY NUMBER): 1a, 1j, 3a, 6e
7. CCIR SUPPORTED (TOTAL NUMBER): 16
8. BRIEF AID DESCRIPTION: This aid is designed to establish weapon control procedures and allocate weapon systems.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	3.4	.109	.371
b. Time and Quality Savings (Small, Large)	8.2	.198	1.624
c. CCIR (Few, Many)	4.9	.360	1.764

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	4.6	.190	.874
b. Economical (High Cost, Low Cost)	4.2	.048	.202
c. Technical (High Risk, Low Risk)	3.4	.095	.323
TOTAL SCORES:	28.7	1.000	5.158

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Predict Contamination (ID Affected Units)
2. AID NUMBER: 3-39
3. PRODUCT SUPPORTED: NBC 3 (Immediate Warning of Expected Contamination
4. PRIMARY ANALYTIC TECHNIQUE: Mach Model
5. SUPPORTING ANALYTIC TECHNIQUE(S): Simulation
6. TASK(S) SUPPORTED (BY NUMBER): 5a
7. CCIR SUPPORTED (TOTAL NUMBER): 4
8. BRIEF AID DESCRIPTION: This aid is designed to calculate expected hazard area and determine affected units.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	1.8	.109	.196
b. Time and Quality Savings (Small, Large)	9.0	.198	1.782
c. CCIR (Few, Many)	1.2	.360	.432

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	9.1	.190	1.729
b. Economical (High Cost, Low Cost)	9.1	.048	.437
c. Technical (High Risk, Low Risk)	8.7	.095	.827
TOTAL SCORES:	38.9	1.000	5.403

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Prioritized of Fire
2. AID NUMBER: 3-40
3. PRODUCT SUPPORTED: Fire Support Annex
4. PRIMARY ANALYTIC TECHNIQUE: Decision Analysis
5. SUPPORTING ANALYTIC TECHNIQUE(S): Simulation, Optimization Techniques, AI
6. TASK(S) SUPPORTED (BY NUMBER): 1a, 1d, 3a
7. CCIR SUPPORTED (TOTAL NUMBER): 14
8. BRIEF AID DESCRIPTION: This aid is designed to calculate expected hazard area and determine affected units.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	4.6	.109	.501
b. Time and Quality Savings (Small, Large)	6.0	.198	1.188
c. CCIR (Few, Many)	4.2	.360	1.512

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	5.9	.190	1.121
b. Economical (High Cost, Low Cost)	5.1	.048	.245
c. Technical (High Risk, Low Risk)	6.4	.095	.608
TOTAL SCORES:	32.2	1.000	5.175

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Rear Area Protection Capabilities
2. AID NUMBER: 3-41
3. PRODUCT SUPPORTED: Rear Area Protection Annex
4. PRIMARY ANALYTIC TECHNIQUE: Simulation
5. SUPPORTING ANALYTIC TECHNIQUE(S): Math Model, Decision Analysis
6. TASK(S) SUPPORTED (BY NUMBER): 1a, 3a, 6d
7. CCIR SUPPORTED (TOTAL NUMBER): 17
8. BRIEF AID DESCRIPTION: This aid is designed to evaluate rear area protection plans and identify assets for the rear battle.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	3.2	.109	.349
b. Time and Quality Savings (Small, Large)	7.8	.198	1.544
c. CCIR (Few, Many)	5.2	.360	1.872

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	4.2	.190	.798
b. Economical (High Cost, Low Cost)	3.4	.048	.163
c. Technical (High Risk, Low Risk)	3.2	.095	.304
TOTAL SCORES:	27.0	1.000	5.030

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Relative Combat Power
2. AID NUMBER: 3-42
3. PRODUCT SUPPORTED: Operational Estimate
4. PRIMARY ANALYTIC TECHNIQUE: Math Model
5. SUPPORTING ANALYTIC TECHNIQUE(S): N/A
6. TASK(S) SUPPORTED (BY NUMBER): 1b, 1d, 1e, 1f, 1g, 1i, 1j, 1K, 1l, 3f, 4b, 4c
7. CCIR SUPPORTED (TOTAL NUMBER): 8
8. BRIEF AID DESCRIPTION: This aid is designed to estimate friendly and relative combat power.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	1.8	.109	.196
b. Time and Quality Savings (Small, Large)	7.4	.198	1.465
c. CCIR (Few, Many)	2.4	.360	.864

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	6.6	.190	1.254
b. Economical (High Cost, Low Cost)	2.2	.048	.106
c. Technical (High Risk, Low Risk)	2.8	.095	.266
TOTAL SCORES:	23.2	1.000	4.151

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Replacement Priorities
2. AID NUMBER: 3-43
3. PRODUCT SUPPORTED: OPORD (Service Support)
4. PRIMARY ANALYTIC TECHNIQUE: Decision Analysis
5. SUPPORTING ANALYTIC TECHNIQUE(S): Simulation, AI
6. TASK(S) SUPPORTED (BY NUMBER): 1a, 2a, 2b, 3a
7. CCIR SUPPORTED (TOTAL NUMBER): 7
8. BRIEF AID DESCRIPTION: This aid is designed to assign replacement priorities based on mission, strength, and location.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	1.5	.109	.164
b. Time and Quality Savings (Small, Large)	5.3	.198	1.049
c. CCIR (Few, Many)	2.1	.360	.756

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	4.5	.190	.855
b. Economical (High Cost, Low Cost)	3.1	.048	.149
c. Technical (High Risk, Low Risk)	5.0	.095	.475
TOTAL SCORES:	21.5	1.000	3.448

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Route Evaluation (AVN)
2. AID NUMBER: 3-44
3. PRODUCT SUPPORTED: Aircraft Mission Request (Army Aviation)
4. PRIMARY ANALYTIC TECHNIQUE: Simulation
5. SUPPORTING ANALYTIC TECHNIQUE(S): AI, Optimization Techniques
6. TASK(S) SUPPORTED (BY NUMBER): 1d, 1e, 3c
7. CCIR SUPPORTED (TOTAL NUMBER): 14
8. BRIEF AID DESCRIPTION: This aid is designed to evaluate a selected flight route in terms of risk and protection.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	7.4	.109	.807
b. Time and Quality Savings (Small, Large)	8.3	.198	1.643
c. CCIR (Few, Many)	4.2	.360	1.512

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	2.5	.190	.475
b. Economical (High Cost, Low Cost)	3.4	.048	.163
c. Technical (High Risk, Low Risk)	2.5	.095	.238
TOTAL SCORES:	28.3	1.000	4.838

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Task Organization
2. AID NUMBER: 3-45
3. PRODUCT SUPPORTED: OPORD (Task Organization)
4. PRIMARY ANALYTIC TECHNIQUE: Decision Analysis
5. SUPPORTING ANALYTIC TECHNIQUE(S): AI, Math Model
6. TASK(S) SUPPORTED (BY NUMBER): 1a, 1b, 3a
7. CCIR SUPPORTED (TOTAL NUMBER): 11
8. BRIEF AID DESCRIPTION: This aid is designed to organize combat and combat support units for combat based on mission, terrain, unit status, etc.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	4.3	.109	.469
b. Time and Quality Savings (Small, Large)	6.1	.198	1.208
c. CCIR (Few, Many)	3.3	.360	1.188

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	5.6	.190	1.064
b. Economical (High Cost, Low Cost)	4.7	.048	.226
c. Technical (High Risk, Low Risk)	6.5	.095	.618
TOTAL SCORES:	30.5	1.000	4.773

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Terrain Management
2. AID NUMBER: 3-46
3. PRODUCT SUPPORTED: OPORD (Execution)
4. PRIMARY ANALYTIC TECHNIQUE: Math Model
5. SUPPORTING ANALYTIC TECHNIQUE(S): Optimization Technique, Simulation
6. TASK(S) SUPPORTED (BY NUMBER): 1a, 2a, 2b, 3a
7. CCIR SUPPORTED (TOTAL NUMBER): 15
8. BRIEF AID DESCRIPTION: This aid is designed to assign units to terrain.

9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	4.0	.109	.436
b. Time and Quality Savings (Small, Large)	7.8	.198	1.544
c. CCIR (Few, Many)	4.6	.360	1.656

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	6.5	.190	1.235
b. Economical (High Cost, Low Cost)	5.0	.048	.240
c. Technical (High Risk, Low Risk)	7.2	.095	.684
TOTAL SCORES:	35.1	1.000	5.795

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Time Analysis
2. AID NUMBER: 3-47
3. PRODUCT SUPPORTED: Warning Order
4. PRIMARY ANALYTIC TECHNIQUE: Math Model
5. SUPPORTING ANALYTIC TECHNIQUE(S): Decision Analysis
6. TASK(S) SUPPORTED (BY NUMBER): 1a, 3a, 3c, 3f
7. CCIR SUPPORTED (TOTAL NUMBER): 6
8. BRIEF AID DESCRIPTION: This aid is designed to time-sequence critical actions to ensure subordinate units have time to execute.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	6.4	.109	.698
b. Time and Quality Savings (Small, Large)	7.4	.198	1.465
c. CCIR (Few, Many)	1.8	.360	.648

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	8.4	.190	1.596
b. Economical (High Cost, Low Cost)	7.0	.048	.336
c. Technical (High Risk, Low Risk)	8.3	.095	.789
TOTAL SCORES:	39.3	1.000	5.532

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Target Allocation
2. AID NUMBER: 3-48
3. PRODUCT SUPPORTED: Chemical Support Annex
4. PRIMARY ANALYTIC TECHNIQUE: Simulation
5. SUPPORTING ANALYTIC TECHNIQUE(S): AI, Optimization Techniques, Decision Analysis
6. TASK(S) SUPPORTED (BY NUMBER): 1a, 1e, 3a
7. CCIR SUPPORTED (TOTAL NUMBER): 9
8. BRIEF AID DESCRIPTION: This aid is designed to select chemical targets based on priority and chemical munitions' availability.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	1.5	.109	.164
b. Time and Quality Savings (Small, Large)	5.7	.198	1.129
c. CCIR (Few, Many)	2.7	.360	.972

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	7.6	.190	1.444
b. Economical (High Cost, Low Cost)	7.2	.048	.346
c. Technical (High Risk, Low Risk)	7.4	.095	.703
TOTAL SCORES:	32.1	1.000	4.758

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Target Susceptibility
2. AID NUMBER: 3-49
3. PRODUCT SUPPORTED: NBC Defense Annex
4. PRIMARY ANALYTIC TECHNIQUE: Decision Analysis
5. SUPPORTING ANALYTIC TECHNIQUE(S): Simulation, II
6. TASK(S) SUPPORTED (BY NUMBER): 1a, 3a, 5c
7. CCIR SUPPORTED (TOTAL NUMBER): 11
8. BRIEF AID DESCRIPTION: This aid is designed to evaluate friendly units' susceptibility to an enemy NBC strike.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	3.3	.109	.360
b. Time and Quality Savings (Small, Large)	6.4	.198	1.267
c. CCIR (Few, Many)	3.3	.360	1.188

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	5.5	.190	1.045
b. Economical (High Cost, Low Cost)	6.3	.048	.302
c. Technical (High Risk, Low Risk)	3.6	.095	.342
TOTAL SCORES:	28.4	1.000	4.504

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Troop Exposure.
2. AID NUMBER: 3-50
3. PRODUCT SUPPORTED: NBC Defense Annex
4. PRIMARY ANALYTIC TECHNIQUE: Mach Model
5. SUPPORTING ANALYTIC TECHNIQUE(S): N/A
6. TASK(S) SUPPORTED (BY NUMBER): 1a, 3a, 5c
7. CCIR SUPPORTED (TOTAL NUMBER): 7
8. BRIEF AID DESCRIPTION: This aid is designed to evaluate and monitor NBC status of units.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	2.5	.109	.273
b. Time and Quality Savings (Small, Large)	7.4	.198	1.465
c. CCIR (Few, Many)	2.1	.360	.756

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	7.8	.190	1.482
b. Economical (High Cost, Low Cost)	6.2	.048	.298
c. Technical (High Risk, Low Risk)	7.4	.095	.703
TOTAL SCORES:	33.4	1.000	4.977

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Unit Movement Planner
2. AID NUMBER: 3-51
3. PRODUCT SUPPORTED: Movement Order
4. PRIMARY ANALYTIC TECHNIQUE: Math Model
5. SUPPORTING ANALYTIC TECHNIQUE(S): Simulation, AI, Optimization Techniques
6. TASK(S) SUPPORTED (BY NUMBER): 1a
7. CCIR SUPPORTED (TOTAL NUMBER): 22
8. BRIEF AID DESCRIPTION: This aid is designed to plan and publish movement plans for units, brigade and below.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	5.0	.109	.545
b. Time and Quality Savings (Small, Large)	8.3	.198	1.643
c. CCIR (Few, Many)	6.7	.360	2.412

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	8.3	.190	1.577
b. Economical (High Cost, Low Cost)	6.4	.048	.307
c. Technical (High Risk, Low Risk)	7.6	.095	.722
TOTAL SCORES:	42.3	1.000	7.206

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Forecast Unit Status
2. AID NUMBER: 3-52
3. PRODUCT SUPPORTED: Project Unit Status
4. PRIMARY ANALYTIC TECHNIQUE: Math Model
5. SUPPORTING ANALYTIC TECHNIQUE(S): N/A
6. TASK(S) SUPPORTED (BY NUMBER): 1b, 3b, 4b, 4c, 6d
7. CCIR SUPPORTED (TOTAL NUMBER): 15
8. BRIEF AID DESCRIPTION: This aid is designed to project unit status based on mission, current status, and environmental factors; when necessary, it would activate a critical situation alert.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	6.2	.109	.676
b. Time and Quality Savings (Small, Large)	7.4	.198	1.465
c. CCIR (Few, Many)	4.6	.360	1.656

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	5.2	.190	.988
b. Economical (High Cost, Low Cost)	2.8	.048	.134
c. Technical (High Risk, Low Risk)	4.4	.095	.418
TOTAL SCORES:	30.6	1.000	5.337

AID PRIORITIZATION WORKSHEET

1. AID DESCRIPTOR: Forecast Usage Rates
2. AID NUMBER: 3-53
3. PRODUCT SUPPORTED: Required Ammunition Supply Rate Report
4. PRIMARY ANALYTIC TECHNIQUE: Mata Model
5. SUPPORTING ANALYTIC TECHNIQUE(S): Simulation
6. TASK(S) SUPPORTED (BY NUMBER): 7a
7. CCIR SUPPORTED (TOTAL NUMBER): 6
8. BRIEF AID DESCRIPTION: This aid is designed to forecast ammunition usage based on mission and unit status.
9. RANKING BY SCALES (IMPORTANCE):

	RAW SCORE	WT	ADJ SCORE
a. Frequency (Low, High)	3.1	.109	.338
b. Time and Quality Savings (Small, Large)	8.2	.198	1.624
c. CCIR (Few, Many)	1.8	.360	.648

10. RANKING BY SCALES (FEASIBILITY):

a. Operational (Low, High)	8.4	.190	1.596
b. Economical (High Cost, Low Cost)	6.2	.048	.298
c. Technical (High Risk, Low Risk)	4.6	.095	.437
TOTAL SCORES:	32.3	1.000	4.941

ANNEX V TO APPENDIX I

PRIORITIZATION RESULTS

I-V-1. GENERAL. This annex provides the technical data which was obtained during the prioritization step of the analysis methodology. Tables and figures are provided and each is explained in the following paragraphs. Graphical exploratory data analysis was the primary method employed to compare rank and score relationships. Appropriate graphs are provided in this section to clarify tabulated data.

I-V-2. PRIMARY DATA. Table I-V-1 is a compiled listing of primary data that was developed during the prioritization process. The aiding opportunities are listed in adjusted rank order with the first aid having the highest adjusted total score. The table also lists the raw rank based on total score, the magnitude of difference between the raw rank and the adjusted rank, the adjusted rank with respect to importance, and the adjusted rank with respect to feasibility.

I-V-3. RANK. The ranks for each aiding opportunity were obtained as follows:

a. A prioritization worksheet (See appendix I, annex IV) was prepared to develop an assessment for each aiding opportunity for each of the six subcriteria. The result was a raw score for each subcriterion for each aiding opportunity.

b. The raw scores for each subcriterion were then added together to obtain a raw total score for each aiding opportunity.

c. The raw total scores were then tabulated and sorted to obtain the corresponding raw total rank for each aiding opportunity.

d. Using the hierarchical structure presented in the main report, pairwise comparisons (comparisons of elements in pairs against a given standard) of the criteria and subcriteria yielded the weights or relative utilities which are reflected in figure I-V-1. For each criterion and subcriterion, a local and global utility weight was obtained. The local utility reflects the relative weight of a specific subcriterion on a particular branch of the hierarchy, e.g. CCIR vs. frequency vs. time and quality savings. The global utility was obtained by numerically resolving the utility of all criteria and subcriteria. The global utility of each subcriterion was then used as a basis for obtaining adjusted total scores.

e. Subcriteria ranks obtained from this process were (1) CCIR, (2) time and quality savings, (3) operational environment, (4) frequency, (5) technical and (6) cost.

f. Subcriteria raw scores were multiplied by subcriteria global utilities to obtain adjusted subcriteria scores. Adjusted subcriteria scores were added to obtain an adjusted total score. Adjusted total scores for all aiding opportunities were compiled and sorted to obtain corresponding adjusted ranks.

Table I-V-1. Analytic aiding opportunities (adjusted rank order)
(continued on following pages)

AID DESCRIPTOR	AID ID#	ADJUSTED RANK	RAW RANK	ABSOLUTE RANK DIFF	ADJUSTED IMPORTANCE RANK	ADJUSTED FEASIBILITY RANK
Unit Movement Planner	3-51	1	1	0	1	12
Force Movement Analyzer	3-24	2	3	1	2	11
Air Movement Analyzer	3-04	3	4	1	4	19
Fuel Consumption Rates	3-26	4	5	1	7	10
Air Movement Planner	3-05	5	2	3	13	3
Assign Critical Replacement Units, Personnel, and Materiel	3-08	6	6	0	11	13
Terrain Management	3-46	7	12	5	10	29
Denial Preparation	3-19	8	22	14	12	30
Time Analyzer	3-47	9	7	2	28	4
Pre-Position Decontamination Supplies	3-18	10	17	7	15	27
Compare Alternate Courses of Action	3-13	11	42	31	3	49
Obstacle Preparation	3-31	12	14	2	17	28
Predict Contamination (ID Affected Units)	3-39	13	9	4	36	2
Forecast Unit Status	3-52	14	30	16	6	40
Chemical Effects Prediction	3-20	15	18	3	23	18
Expenditure Rates (FS)	3-22	16	11	5	33	6
Basic Load Allocations	3-10	17	8	9	42	1
Nuclear Effects Prediction	3-21	18	16	2	30	15
Aircraft Asset Analyzer	3-02	19	10	9	26	21
Priorities of Fire (FS)	3-40	20	24	4	18	32
Priorities/Allocation (ADA)	3-38	21	33	12	9	43
Rear Area Protection Capabilities	3-41	22	39	17	8	45

Table I-V-1. Analytic aiding opportunities (adjusted rank order) (continued)

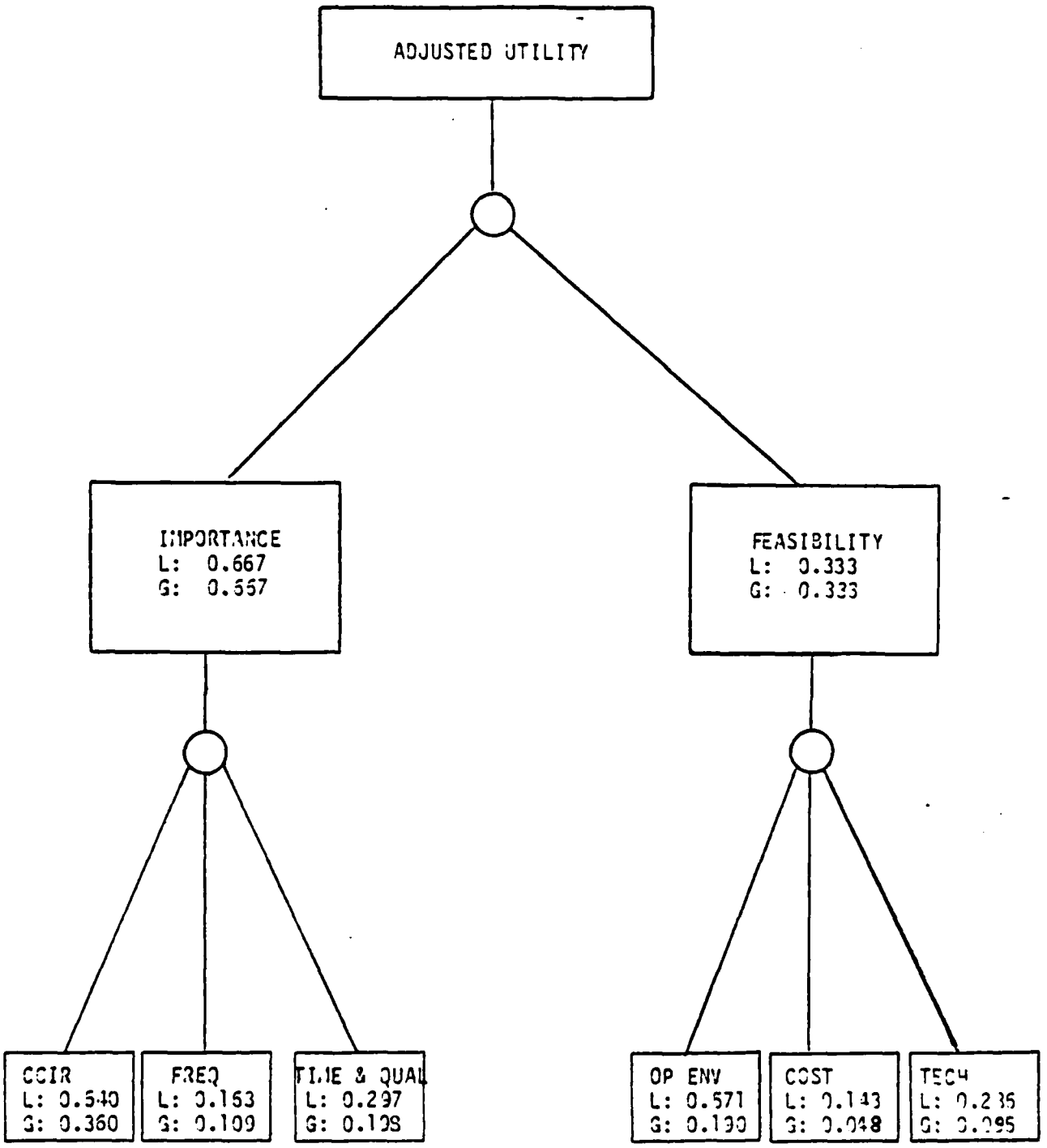
AID DESCRIPTOR	AID ID#	ADJUSTED RANK	RAW RANK	ABSOLUTE RANK DIFF	ADJUSTED IMPORTANCE RANK	ADJUSTED FEASIBILITY RANK
Troop Exposure (NBC)	3-50	23	19	4	35	17
Evaluate Damage Repair Alternatives	3-17	24	27	3	21	31
Forecast Tube Replacement (FS)	3-25	25	13	12	39	9
Forecast Usage Rates (RSR)	3-53	26	23	3	32	23
Allocate CAS and RECCE	3-11	27	28	1	31	25
Controlled Supply Rate (CSR)	3-15	28	13	15	43	7
Route Evaluation (AVN)	3-44	29	35	6	5	52
ADM Employment	3-33	30	29	1	38	20
Task Organization	3-45	31	31	0	22	34
Target Allocation (Chemical)	3-48	32	25	7	40	16
Aircraft Requirements	3-03	33	32	1	25	35
Prescribed Nuclear Load (PNL)	3-37	34*	26	8	37	22
Prescribed Chemical Load (PCL)	3-36	34*	26	8	37	22
Optimal Friendly Employment (EW)	3-34	35	36	1	14	44
Organize for Combat (FS)	3-35	36	37	1	24	36
Allocate Engineer Resources	3-07	37	15	22	41	26

* Ties were allowed for ranks. PCL and PNL had a tie for all scoring schemes. Therefore, the adjusted ranks ranged from 1-52 for a total of 53 aiding opportunities.

Table I-V-1. Analytic aiding opportunities (adjusted rank order) (concluded)

AID DESCRIPTOR	AID ID#	ADJUSTED RANK	RAW RANK	ABSOLUTE RANK DIFF	ADJUSTED IMPORTANCE RANK	ADJUSTED FEASIBILITY RANK
Target Susceptibility (NBC)	3-49	38	34	4	27	37
Fallout Prediction (Nuclear)	3-23	39	21	18	48	8
Hazard Areas (NBC)	3-27	40	20	20	45	14
Allocate Replacements	3-06	41	43	2	16	48
Obstacle Emplacement Plan	3-30	42	41	1	29	39
Integrate CAS (FS)	3-28	43	44	1	20	42
Relative Combat Power	3-42	44	45	1	34	38
Control Procedure (A2C2)	3-14	45	46	1	19	51
NBC Effects Evaluation	3-29	46	38	8	47	24
Post-Strike Analysis (Nuclear)	3-16	47	31	16	50	5
Determine Replacement Priorities	3-43	48	47	1	44	41
Allocate Critical Assets (ECM)	3-01	49	40	9	51	33
Assign PSYOP Assets	3-09	50	49	1	46	47
Obstacle Effectiveness	3-12	51	48	3	49	46
PSYOP Effectiveness	3-32	52*	50	2	52	50

* Ties were allowed for ranks. PCL and PNL had a tie for all scoring schemes. Therefore, the adjusted ranks ranged from 1-52 for a total of 53 aiding opportunities.



LEGEND:

L: Local utility weighting for criteria/subcriteria.

G: Global utility weighting for criteria/subcriteria.

Figure I-V-1. Hierarchy, local and global weights

g. The rank difference was obtained by determining the absolute value of the difference between the adjusted rank and the raw rank for each aiding opportunity. This value provides information concerning the impact of equal vs. unequal utilities for the subcriteria.

h. Importance rank was obtained by ranking aiding opportunities based on adjusted total scores for importance.

i. Feasibility rank was obtained by ranking aiding opportunities based on adjusted total scores for feasibility.

I-V-4. DISTRIBUTION OF SCORES. Figures I-V-2 through I-V-5 show the relative distribution of scores which were used to obtain ranks. Ranks provide only ordinal information while scores provide interval information concerning the magnitude of difference between aid scores. The figures were useful to identify groups of aids which were dominant or inferior across all ranking schemes and enabled better understanding of the distribution of aids over the scoring spectrum.

I-V-5. CORRELATION OF RANKS. Figures I-V-6 through I-V-8 show the relative ranks of aids for total raw, adjusted importance and adjusted feasibility compared to adjusted total ranks to clarify the relationship or contribution of each to adjusted rank.

I-V-6. GRAPHICAL ANALYSIS.

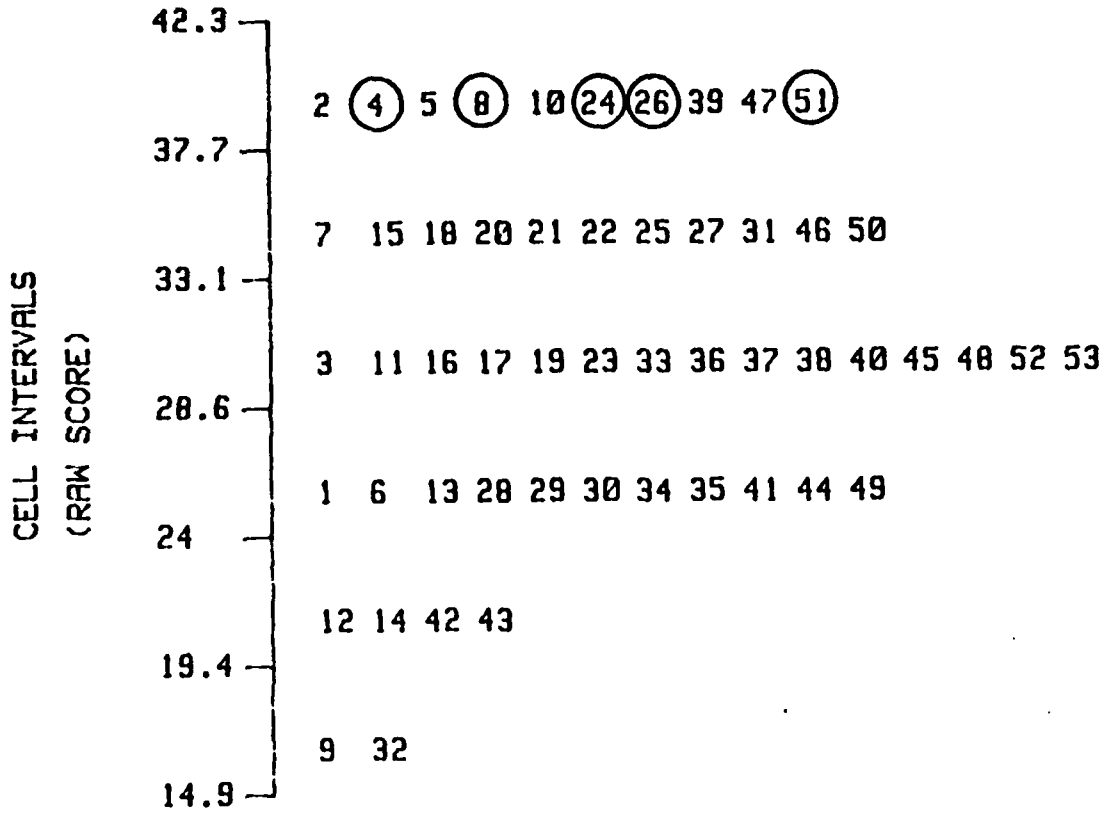
a. Distribution of Scores. The following insights were derived from examination of figures I-V-2 through I-V-5.

(1) Distribution of Total Raw Scores. Distribution of raw scores appears to be unimodal with some showing toward higher scores. Aids which consistently scored in the highest two cells for all scoring schemes are circled on all leaf plots to highlight their dominance. The frequency distribution is approximately normal. (Refer to figure I-V-2).

(2) Distribution of total adjusted scores. Distribution of total adjusted scores exhibits strong unimodality and a very slight skewing effect toward lower scores. The frequency distribution is approximately normal. (Refer to figure I-V-3).

(3) Distribution of importance scores. Distribution of importance scores appears to be unimodal with a slight skewing effect toward higher scores. The frequency distribution is approximately normal. (Refer to figure I-V-4).

(4) Distribution of feasibility scores. Distribution of feasibility scores appears to be bimodal. This graphical presentation prompted an investigation of aiding opportunities which scored in the score interval .8-1.2 to determine if there was some characteristic that was shared by all with regard to feasibility. The aids in this cell all scored less than .5 on a scale from 0 to 10 for operational environment, development cost, and technology. Several appeared to be dependent on technical capabilities such as digitized terrain or were extremely complex (such as Compare Alternative Courses of Action).



LEAF PLOT OF RAW SCORES (EQUAL CELLS)

Figure I-V-2. Distribution of raw scores

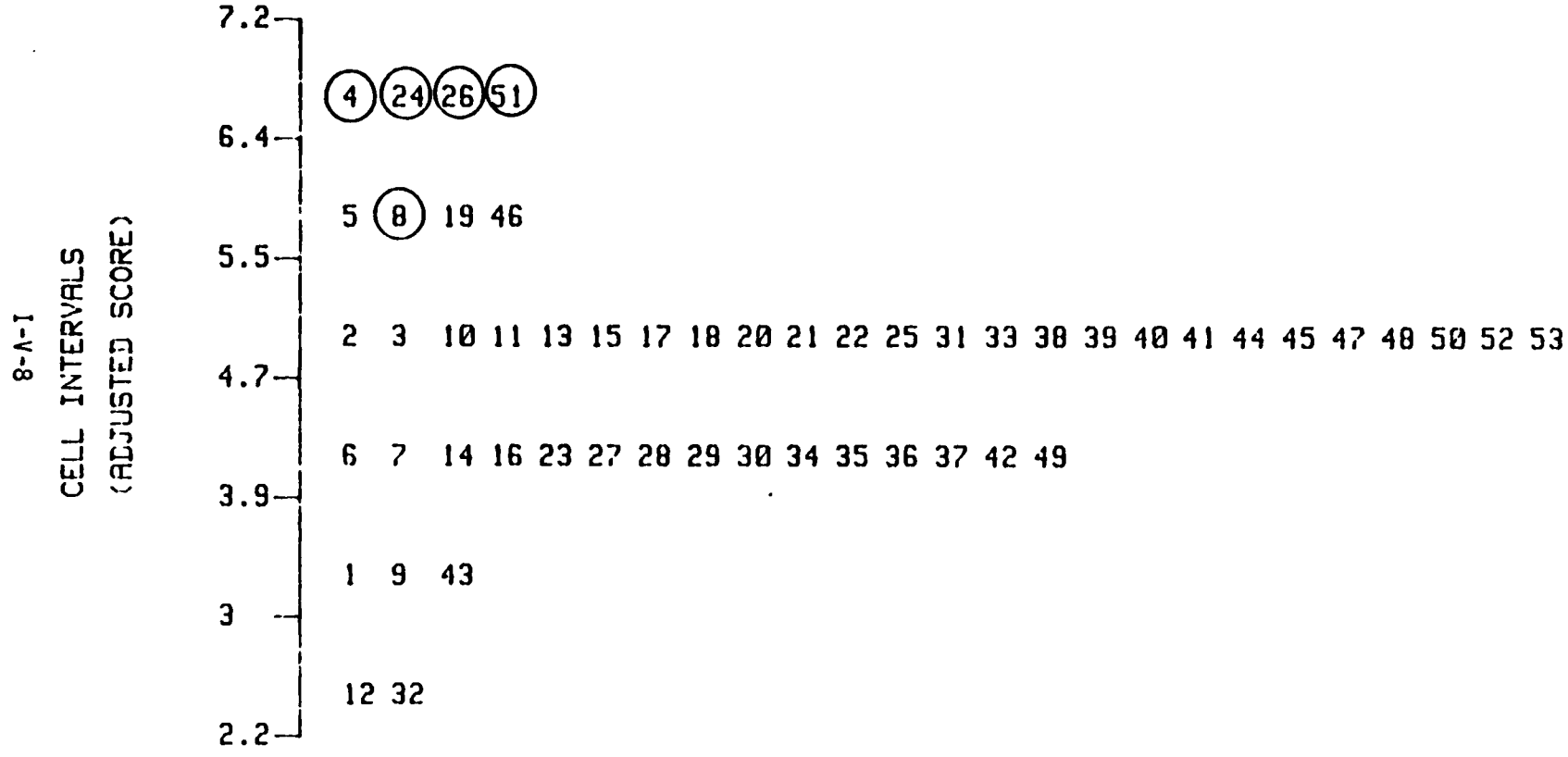


Figure I-V-3. Distribution of adjusted scores

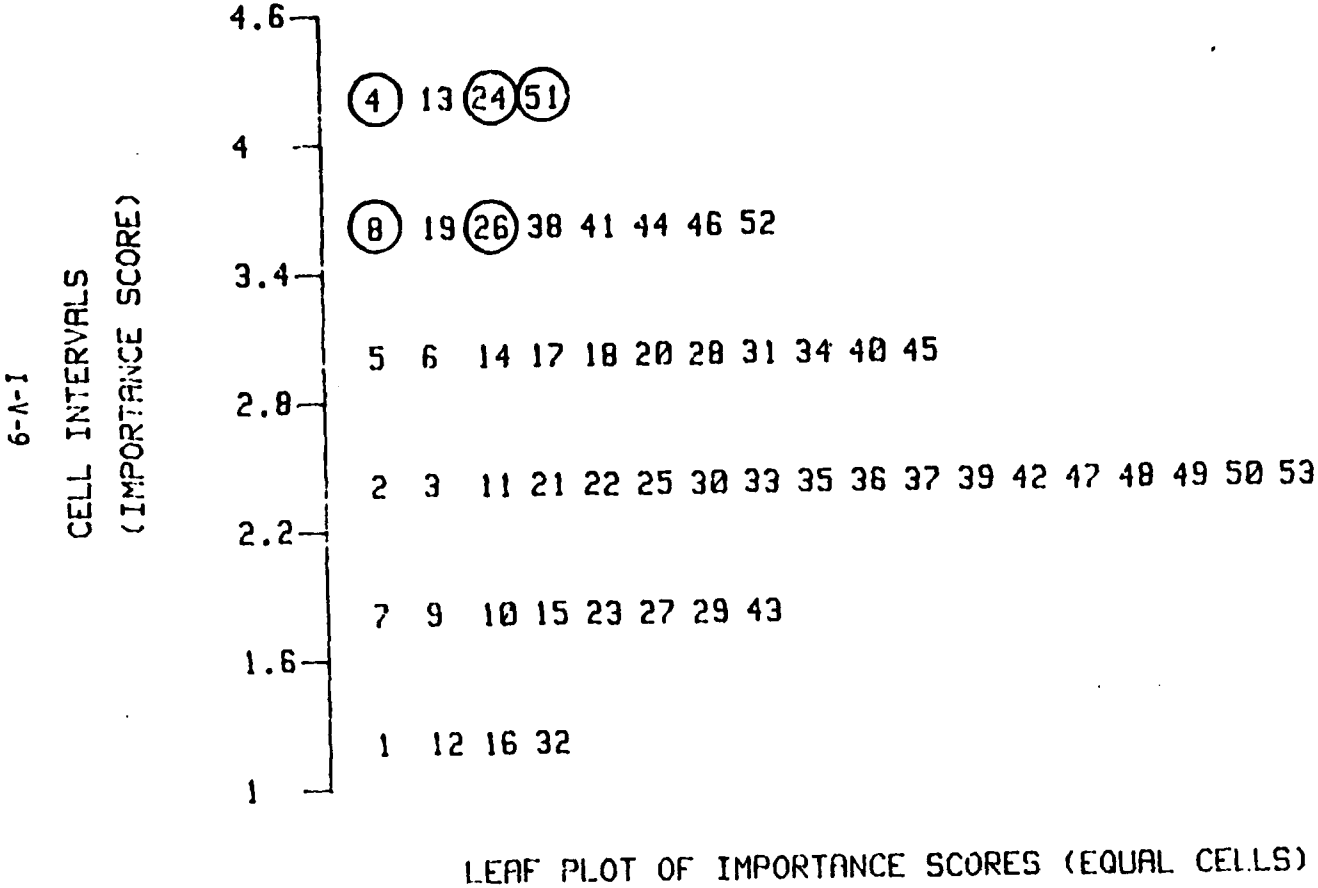


Figure I-V-4. Distribution of importance scores

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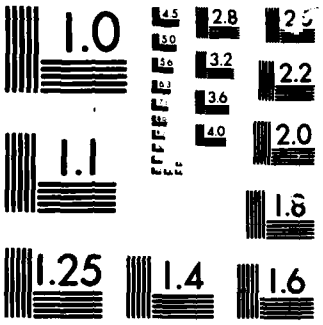

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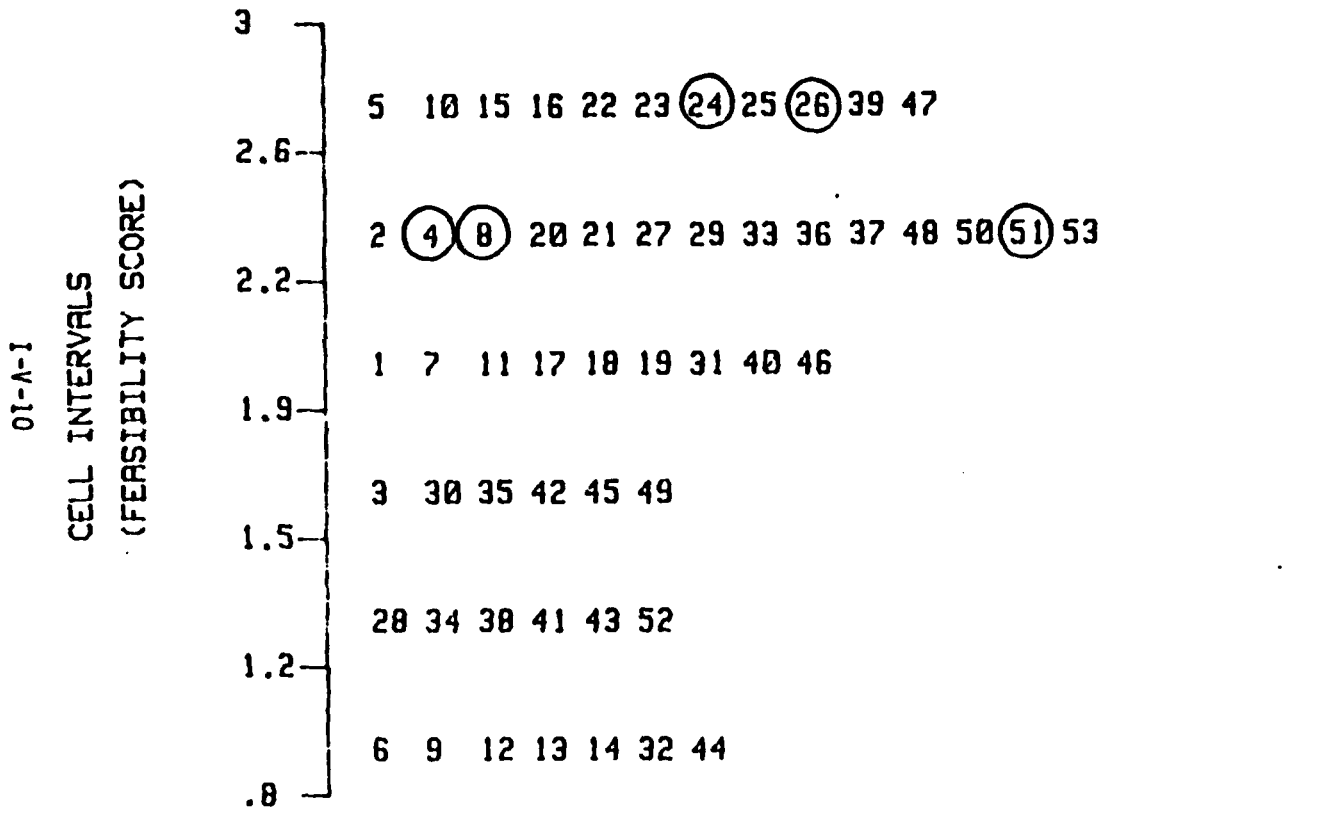

LEAF PLOT OF FEASIBILITY SCORES (EQUAL CELLS)

Figure I-V-5. Distribution of feasibility scores

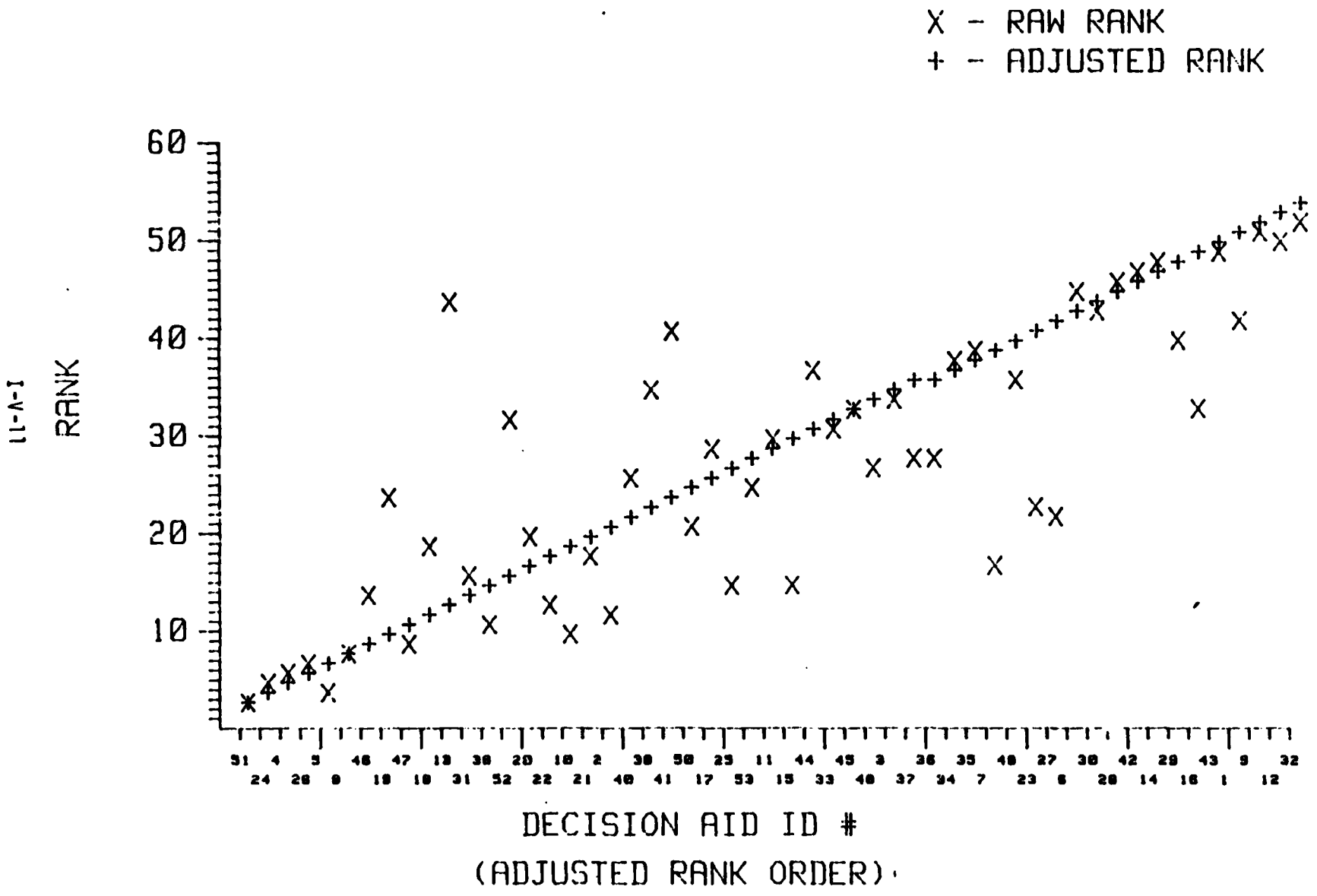

Figure I-V-6. Raw rank vs. adjusted rank scatter plot.

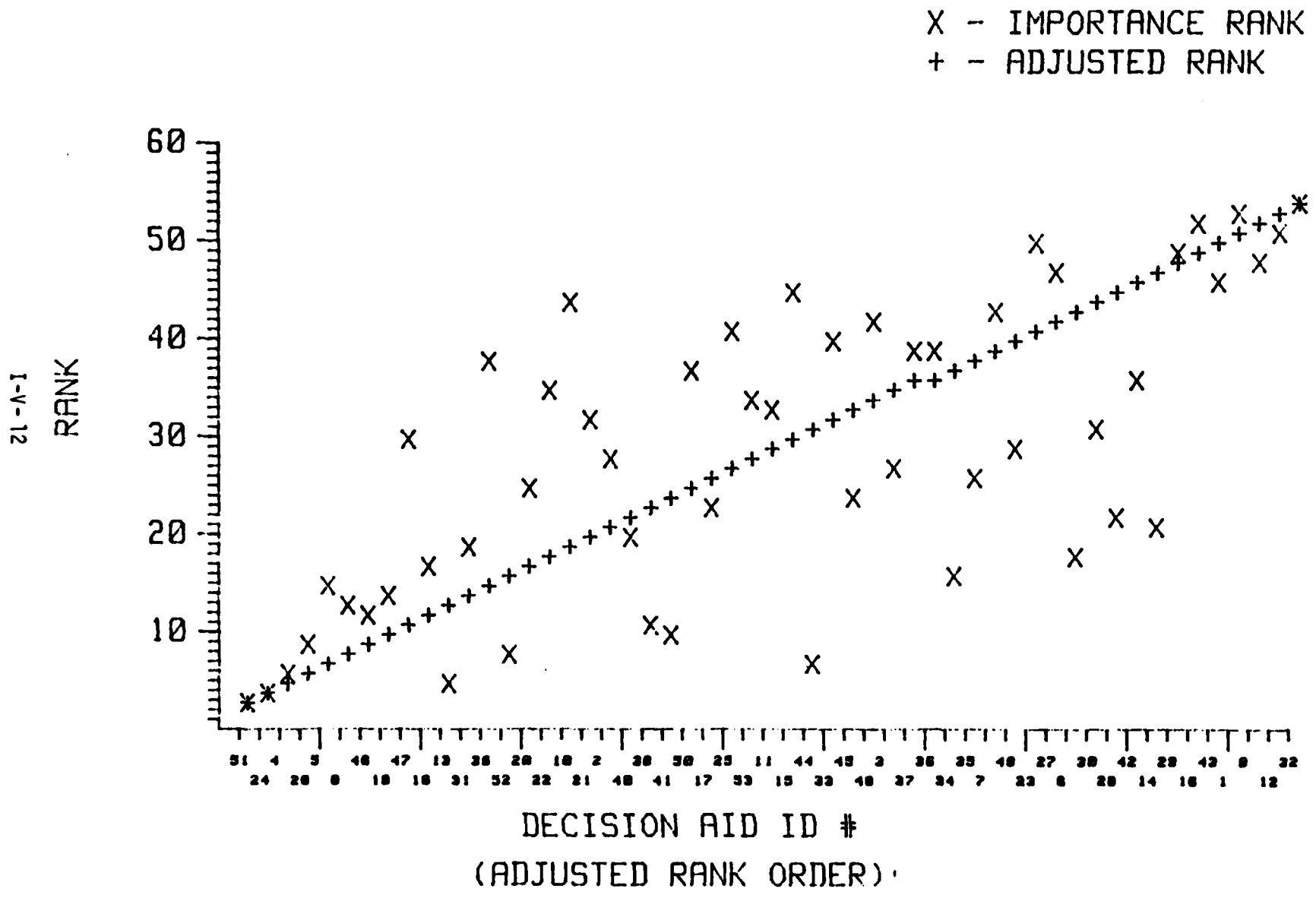

Figure I-V-7. Importance rank vs. adjusted rank scatter plot.

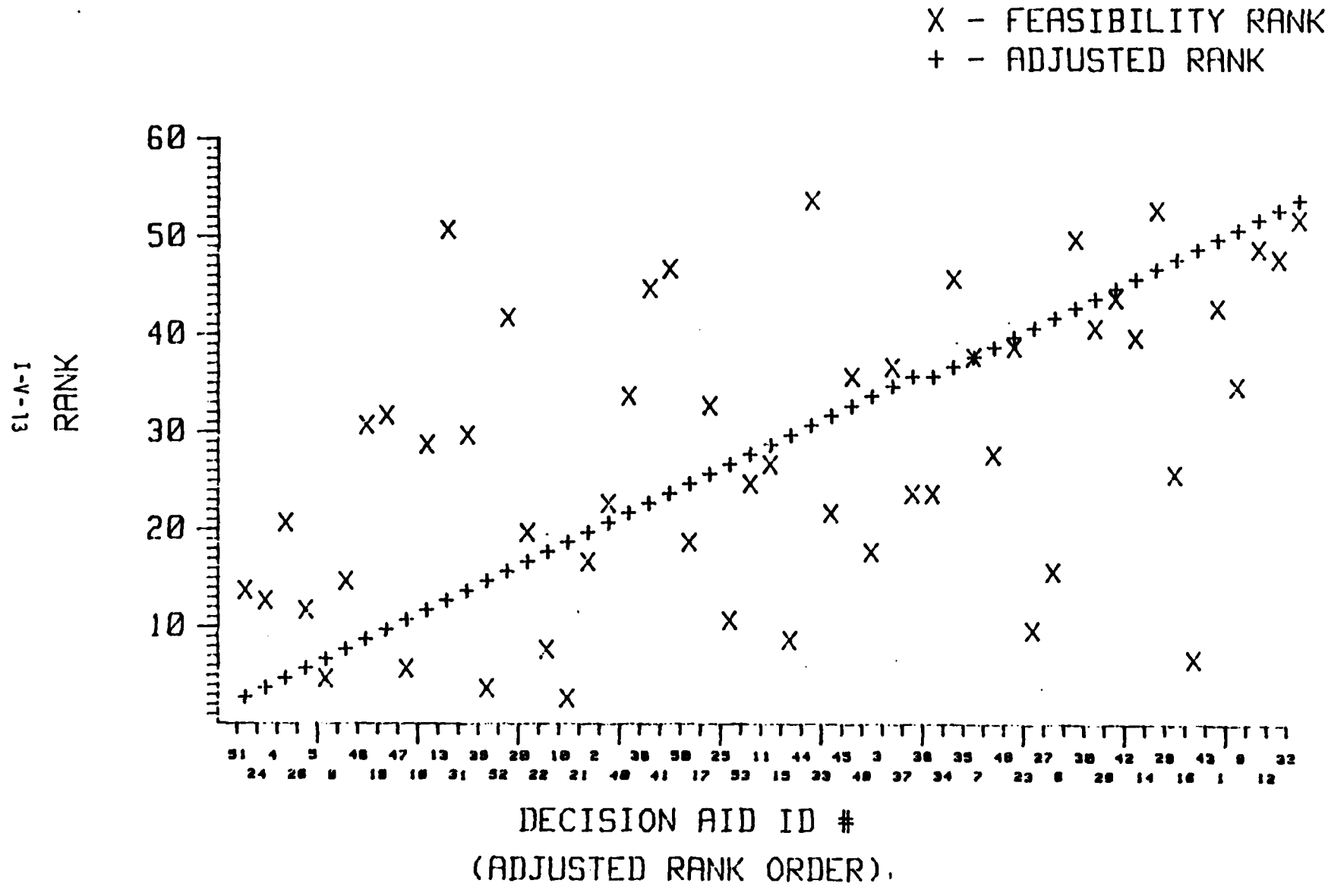

Figure I-V-8. Feasibility rank vs. adjusted rank scatter plot.

(5) Conclusions concerning distribution of scores. With the exception of feasibility, the general distributions of scores tended to be normal. The lear plot technique facilitated investigation of dominance across all scoring schemes as well as investigation of bimodal feasibility. Five aiding opportunities exhibited dominance across all scoring schemes: Air Movement Analyzer (04), Assign Critical Replacements (08), Force Movement Analyzer (24), Fuel Consumption Rates (26), and Unit Movement Planner (51). (The numbers in parentheses are aid identification numbers which were assigned in annex I of appendix I.) This dominance demonstrates the robustness of these aids across all scoring schemes.

b. Correlation of Ranks. The following insights were derived from examination of figures I-V-6 through I-V-9.

(1) Raw rank vs. adjusted rank. Figure I-V-6 presents a comparative scatter plot of raw rank vs. adjusted rank. If the raw and adjusted points had plotted close to each other, the implication would be that no substantial rank difference had resulted from application of the utility weights to the raw scores. However, there is substantial difference in ranks for the raw and adjusted data. One highlight of this plot is that the first and last several rank ordered aiding opportunities appear to be consistently dominant or inferior for both of the weighting schemes. Most of the first 15 aids ranked in the top 25 for both weighting schemes while most of the last 15 aids ranked in the bottom 25.

(2) Importance rank vs. adjusted rank. Since two-thirds of the adjusted score was based on the importance component, a high graphical correlation would be expected. This expectation is generally supported by comparison of figure I-V-7 and figure I-V-8.

(3) Feasibility rank vs. adjusted rank. Figure I-V-8 demonstrates low correlation between feasibility rank and adjusted rank. Little more can be said about the relationship at this point.

(4) Conclusions concerning correlation of ranks. Highest correlation of ranks exists between adjusted rank and importance rank. This is explained by the dominant nature of importance in the scoring scheme.

I-V-7. STATISTICAL ANALYSIS. The following basic descriptive statistics were obtained from the prioritization of data.

a. Raw Scores.
   (1) Mean: 31.49
   (2) Range: 42.3-14.9
   (3) Standard Deviation: 6.132

b. Adjusted Scores.
   (1) Mean: 4.899
   (2) Range: 7.207-2.192
   (3) Standard Deviation: .952

c. Importance Scores.
(1) Mean: 2.803
(2) Range: 4.600-1.088
(3) Standard Deviation: .813

d. Feasibility Scores.
(1) Mean: 2.091
(2) Range: 3.011-.876
(3) Standard Deviation: .577

e. Rank differences. (raw vs. adjusted).
(1) Lower Quartile: 1
(2) Median: 3
(3) Upper Quartile: 9
(4) The rank difference for 75 percent of the aiding opportunities is nine or less in magnitude.

APPENDIX J

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